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OBSERVATIONS

Percival UPON

Mr. POTT's *General Remarks on* FRACTURES, *&c.*

IN

Three LETTERS to a young SURGEON intending to ſettle in the Country.

With a POSTSCRIPT,

Concerning the CURE of COMPOUND DISLOCATIONS; in which the uſual Method of treating WOUNDS of the TENDONS and LIGAMENTS is briefly conſidered.

> "I hope that I ſhall never heſitate to differ from any,
> "and every authority, when I think that I have
> "truth on my ſide, and the good of mankind in
> "my view." POTT.

By THOMAS KIRKLAND, SURGEON.

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MDCCLXX.

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INTRODUCTION.

TO THE STUDENTS in SURGERY.

GENTLEMEN,

I Beg leave to lay before you the following Letters, which contain a ſhort view of the improvements made in England in the cure of ſimple fractures, within theſe laſt twenty years; a diſſuaſive againſt ſpeedy amputation (except in ſome particular caſes) in compound fractures; and ſome practical obſervations added to Mr. POTT's theory on diſlocations; tho' perhaps that letter which relates to the treatment of compound fractures, and the Poſtſcript on compound diſlocations, may chiefly merit your attention.

I have always heard of *ſpeedy amputation* in ſuch accidents with aſtoniſhment and concern, eſpecially in theſe days, in which it is ſaid Surgery has made ſuch great ſtrides towards perfection; and was glad to ſee that Mr. BOUCHER (*a*) and Mr. BILGUER (*b*) had reſolution enough to make a proteſt againſt this practice, which appears to me moſt frequently precipitate and unneceſſary; tho' upon reading Mr. BILGUER's book, I was ſorry to obſerve, that he had taken off from the weight of his arguments, by indiſcriminately and almoſt totally forbidding this operation.

However, what Mr. POTT has now ſaid about amputation in compound fractures, ſeems to demand a further enquiry into this matter; and the requeſt of the young Gentleman, to whom theſe letters were written, has drawn me to undertake a taſk, which I ſhould have been glad to have ſeen

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(*a*) See Mem. Royal. Acad. Surg. vol. ii. Mem. 9.

(*b*) Diſſert. on the inutility of the amputat. of limbs.

done by ſome other perſon; for publickly diſſenting from the opinion of men truly eminent in their profeſſion is extremely diſagreeable; and yet it is abſolutely neceſſary, when there is ſufficient ground to think what they have advanced may happen to prove injurious; for whatever comes from ſuch hands, commonly makes deep impreſſion upon the minds of thoſe, who have not had experience enough to judge for themſelves. Nor can an ingenuous diſquiſition be diſpleaſing to a generous mind.

Inſtead, therefore, of confining to private uſe, what occurred to me while I was writing upon this ſubject, I alſo offer it to your notice; and if what I have aſſerted, upon proper enquiry is found to be true; it will, I hope, be thought a ſufficient apology for this publication.

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By THOMAS KIRKLAND, SURGEON.

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OBSERVATIONS, &c.

LETTER I.

Aſhby, Feb. 1, 1769.

Dear SIR,

I TAKE the firſt opportunity that buſineſs will permit, of anſwering your Letter, dated the beginning of laſt month, by informing you, that I have read Mr. POTT's book upon Fractures, which contains many valuable directions; and I know, that putting the muſcles, as he adviſes, in a ſtate of relaxation, both at the time of reduction, and during the remainder of the cure, will, on many accounts, be attended with great eaſe, and great advantage to the patient.

I imagine the rigid diſcipline of keeping fractured legs in a ſtate of extenſion, has not been ſo ſteadily adhered to, ſince Mr. PUGH (*a*), in 1754, propoſed, by the

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(*a*) Treatiſe of Midwifery, p. 150.

uſe of his ſplints, to move the patient from his back to his ſide, in order to give him relief in his ſituation; and wherever this method was practiſed, the leg muſt frequently be laid on one ſide with the knee bent, though, probably, often without being aware of all the advantages ariſing from this poſture. Ever ſince the firſt of May 1758 (*a*), I have conſtantly laid fractured thighs in the manner Mr. POTT directs, and believe it has been practiſed by others, to whom I pointed out the advantages of this ſituation; in particular, it ſeems impoſſible to make a good cure, where the neck of the thigh bone is fractured, without putting the limb in a ſtate of flexion (*b*); but by this method I have

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(*a*) One Oſbourne, of Donnington on the Heath, at this time broke his thigh ſomewhere, near Leiceſter, and was brought home ſeveral miles in a coal waggon, over a very rough ſtony road, by which means his thigh was violently ſhaken, and it afterwards ſwelled to an enormous ſize. To reduce this ſwelling, I applied a ſtale beer poultice, and placed the muſcles in a ſtate of relaxation, by laying the thigh on one ſide, with the knee bent, which anſwered my expectation; for the patient ſoon became very eaſy, and a compleat cure followed, with leſs trouble than I had ever before ſeen; and left no room for me to doubt, which was the beſt method of placing ſimple fractures of the thigh.

(*b*) It muſt be obſerved, that Mr. PUGH recommended the placing the thigh in a ſtate of flexion when fractured at the neck, tho' he did not lay it on one ſide, but in a box contrived for this purpoſe.

ſeen this accident cured without lameneſs.

The old method of violent extenſion to reduce fractured limbs, I do believe has been long diſuſed, becauſe quite unneceſſary, and evidently, to every capacity, injurious; nor do I remember ever ſeeing it practiſed, the bones being always capable of being laid ſtrait by gentle extenſion; and Mr. GOOCH (*a*), ten years ſince, recommended this kind of treatment, in his Caſes and Remarks in Surgery.

I imagine the limb, in ſimple fractures, has not frequently been diſturbed, after being properly placed, except by thoſe, who uſe no other than liquid diſcutients. We never unwrap or move it, till it will bear moving, unleſs great ſwelling has made the uſe of poultices neceſſary; for by applying a cerate, that, without irritating, is capable of attenuating the obſtructed fluids, and of preſerving the *veſſels* in a ſtate of acting upon their contents, we keep the part in a continual ſtate of perſpiration; ſo that we have nothing to do, but to ſee that the limb lies eaſy, and is not diſplaced; or, where a moderate ſwelling has taken place

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(*a*) See page 298.

before this application is uſed, we gradually draw our bandage and ſplints a little tighter as the ſwelling ſubſides. Whereas, thoſe who uſe embrocations, *&c.* only, are daily diſturbing their bandage, and, after all, neglect that principal point of preſerving the natural elaſticity of the fibres, to which, where the parts are neither much bruiſed nor ſwelled, a *proper degree of preſſure* by bandage may greatly contribute, by not ſuffering the veſſels to be diſtended beyond their natural ſtate; whence leſs inflammation, leſs pain, and conſequently leſs diſturbance will follow. This may be accompliſhed by the eighteen tail bandage, which has been long uſed in ſimple fractures; and Mr. GOOCH publickly took notice of the advantages that would ariſe from its ſupplying the place of the common roller, in the Caſes and Remarks we have referred to; but it muſt be obſerved, that Mr. POTT's contrivance, of making the tails fold over each other in an oblique direction, is a conſiderable improvement.

Mr. PUGH's long ſplints were made to ſecure both ends of the fractured bone. Mr. GOOCH (*a*), ſome years after, adviſed the ſame practice; and both Mr. WATHEN and

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(*a*) Caſes and Remarks in Surgery, vol. ii. p. 300.

and Mr. **Sharp** have ſince made an improvement, by adapting long ſplints to the ſhape of the leg.

So that you ſee the practice recommended has been gradually taking place: tho' putting the limb in a ſtate of flexion to aſſiſt reduction is entirely new, except that Mr. **Sharp**, of Mincing-lane, aſſiſtant Surgeon of the ſame Hoſpital, has got the ſtart of Mr. **Pott**, by laying, in November, 1766, a paper before the Royal Society, wherein he adviſes, "when a Surgeon is called to a fractured leg, at the "place where the accident happens, let "him lay the patient on the injured ſide, "on a flat ſurface, and raiſe the knee of "the limb towards the abdomen, bending "at the ſame time the knee-joint, ſo as "to put the extenſor muſcles of the foot "(which are the ſtrongeſt) into a ſtate of "relaxation. He will then be enabled to "replace the ends of the fractured bones, "and reſtore them to their proper ſituation, without the cuſtomary ſtrong extenſion of the limb, which is troubleſome to the Surgeon, painful to the patient, and apt to bring on tenſion, ſpaſms, "and inflammation of the ſtretched muſcles.

" The fracture being reduced, and the " patient laid on a bed, upon which there " is a mattreſs; the proper remedies, with " the many tail bandage, which has been " uſed many years in St. Bartholomew's " Hoſpital, and his long ſplints are applied; the patient is kept on his ſide, " with the broken leg undermoſt, the knee " bent, and the thigh drawn up, inſtead " of laying him on his back, with the injured limb extended.—Theſe ſplints (he ſays) " were firſt applied, with great ſucceſs, in an oblique fracture of the Tibia " (which could not be kept in a proper ſituation by the uſual methods) and afterwards as happily in a diſlocation of the " lower extremity of the ſame bone, accompanied with a fracture of the Fibula. In this latter caſe it is often difficult to reduce the diſlocation, even with " a ſtrong extenſion, and more ſo to retain the bones in their proper ſituation, " whilſt the limb is laid in the uſual extended poſture, both which difficulties " are abſolutely avoided by the means " above deſcribed."— Nevertheleſs, in juſtice to Mr. Pott, it muſt be obſerved, that he is the firſt writer who has *ſcientifically* proved, that putting the muſcles in a ſtate of *relaxation*, and *non-reſiſtance*, is the moſt proper method both of reducing and curing fractures; and he has further demonſtrably ſhewn, that this part of Surgery, as well as the reſt, can only be regularly practiſed by thoſe who underſtand the ſtructure and uſe of the ſeveral parts of the body: notwithſtanding many *bone-ſetters* have acquired reputation by pretending to have cured fractured limbs, which were never broken.

I ſhall take the firſt opportunity of reſuming this ſubject; and the next Letter I ſend you, may, perhaps, be of a more intereſting nature.

I am, *&c.*

LETTER II.

Feb. 20, 1769.

Dear SIR,

NOtwithſtanding I ſo much approve of the directions Mr. POTT has given about treating ſimple fractures, and pay the greateſt deference to his opinion, yet I think what he has ſaid about the neceſſity of immediate amputation in very bad compound fractures, is too general; for tho' the practice he recommends may be right in the Hoſpital, to which he is Surgeon, it does not follow, that the ſame ſteps ſhould be taken in the ſituation, in which you intend to place yourſelf.

Indeed, if amputation is to take place whenever the *probable* chance of deſtruction, from the nature and circumſtances of the accident, is greater than it would be from this operation, every limb muſt be cut off, where the bones are ſhattered, and the muſcles *conſiderably* torn, as I imagine, in general, in ſound habits amputation would be attended with much leſs trouble and more abſolute certainty of recovery, than even a compound fracture, where the bone has made its way out in ſuch a manner, as to give free admiſſion to the air, without cauſing any violent laceration of the muſcles. And yet fractures, thus circumſtanced, ſo frequently admit of cure, as to juſtify every attempt to preſerve the limb. Nor can I think, in private practice, the conſideration of amputation (where it is not *fully evident*, that the limb cannot hereafter be uſeful) often requires *immediate* determination; that a minute's delay will, many times, be to the patient's diſadvantage; or that a ſmall ſpace of time will *frequently* make all the difference between probable ſafety and fatality; if, according to Mr. POTT, immediate amputation is only to prevent gangrene, or a large ſuppuration, with formation and lodgment of matter; for gangrenes following injuries muſt be either *local*, from the violence of the injury, or ſucceeding inflammation, or they muſt ariſe from a bad habit of body, or both cauſes joined.

If a gangrene is only local, we need not be precipitate in our determination; becauſe, by proper management, it will certainly ſtop, when it comes to the parts which are not injured. If it is likely to ariſe from a bad habit of body, amputation will not prevent it, as the wound following the operation will moſt likely mortify; for in a gangrenous diſpoſition of the fluids, this diſeaſe as frequently manifeſts itſelf in ſimple, as in more complex wounds; and ſurely there are other methods to remedy large ſuppuration or lodgement of matter; or at leaſt we ought not to amputate, till we ſee the diſcharge is greater than the patient can bear. So that you ſee, there will always be time for deliberation; whence we ſhall act with a certainty that cannot be known, except in particular caſes, when we are firſt called to the patient, and if neceſſary we ſhall have opportunities of performing the operation, before he becomes incapable of undergoing its conſequences.

But Mr. POTT is of a very different opinion; he ſays, "when gangrene and "mortification are the mere conſequence "of the injury done to the limb, either at "the time of, or by the fracture, it generally makes its appearance very early; "in which caſe alſo, its progreſs is generally too rapid for art to check. For "theſe reaſons, when the miſchief ſeems "to be of ſuch a nature, as that gangrene

" and mortification are moſt likely to en-
" ſue, no time can be ſpared, and the im-
" pending miſchief muſt either be ſub-
" mitted to, or prevented by early ampu-
" tation. I have already ſaid, that a very
" few hours make all the difference be-
" tween probable ſafety and deſtruction.
" If we wait till the diſeaſe has taken poſ-
" ſeſſion of the limb, even in the ſmalleſt
" degree, the operation will anſwer no
" purpoſe, but that of accelerating the
" patient's death. If we wait for an ap-
" parent alteration in the part, we ſhall
" have waited until all opportunity of be-
" ing really ſerviceable is paſt. The diſ-
" eaſe takes poſſeſſion of the cellular mem-
" brane ſurrounding the large blood veſſels
" and nerves, ſome time before it makes
" any appearance in the integuments, and
" will always be found to extend much
" higher in the former, than its appear-
" ance in the latter ſeems to indicate. I
" have more than once ſeen the experi-
" ment made of amputating, after a gan-
" grene has begun, but I never ſaw it
" ſucceed; it has always haſtened the pa-
" tient's deſtruction.

" I would therefore adviſe, that ſuch
" attempt ſhould never be made; but the
" firſt opportunity having been neglected,
" or

" or not embraced, all the power of the " chirurgical art is to be employed in aſ" ſiſting nature to ſeparate the diſeaſed " part from the ſound; an attempt which, " now and then, under particular circum" ſtances, has proved ſucceſsful, but is ſo " rarely ſo, as not to be much depended " upon.

" If the parts are ſo bruiſed and torn, " that the circulation through them is " rendered impracticable; or if the gan" grene is the immediate effect of ſuch " miſchief; the conſequence of omitting " amputation, and of attempting to ſave " the limb, is, as I have already obſerved, " moſt frequently very early deſtruction: " But if the gangrenous miſchief be not " merely and immediately the effect of the " wounded ſtate of the parts, but of high " inflammation, badneſs of general habit, " improper diſpoſition of the limb, *&c.* it " is ſometimes in our power ſo to allevi" ate, correct, and alter theſe cauſes, as " to obtain a truce with the diſeaſe, and a " ſeparation of the unſound parts from the " ſound."

Now, I have not any doubt, but, in St. Bartholomew's Hoſpital, what is here ſaid about the rapidity and untractableneſs of mortifications, ariſing merely from injury done to the limb, is exactly true; for I can readily conceive, in this ſituation, local, will often be converted into the moſt malignant ſpreading gangrenes, in oppoſition to the utmoſt care and good management. Otherwiſe it has always been thought, that gangrenes from a bad habit of body are more difficult of cure, than thoſe which ariſe from the wounded ſtate of the parts; for from the days of HIPPOCRATES, down to RUSHWORTH, gangrenes, from a bad habit of body, were always, by the ableſt Surgeons, deemed to be incurable; whereas inſtances abound of mortifications from the violence of the injury alone being cured by amputation (*a*), cauterization, cauſtics, *&c.* and though ſince the uſe of the bark in this diſeaſe has been known, we can often cure gangrenes ariſing from an internal cauſe, yet in the country, I have conſtantly found, that

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(*a*) The ſucceſs which attended amputation in *local* gangrenes inclining to ſpread, probably for want of proper diſtinction, brought it *indiſcriminately* into uſe in *ſpreading* gangrenes ariſing from a diſeaſed habit; where it would always prove inſufficient to anſwer any good end. And though we do not recommend amputation in any kind of gangrene, till it is ſtopped; yet, from this ſtate of the matter, we ſee the reaſon why it has, in this caſe, both been adviſed and rejected.

that thoſe, which ariſe ſimply from the injury, are with more certainty relieved.

Perhaps there is not any thing which contributes more to a true method of treating mortifications, than making a proper diſtinction betwixt one mortification and another; and my practice ſeveral years ago led me to diſcover the difference in them already mentioned; which diſtinctions have ever ſince been of great uſe to me in the management of this diſorder: But as I cannot find, that what I ſaid about this matter, in my treatiſe of Gangrenes, is attended to, I ſhall here deſcribe ſeparately the ſymptoms accompanying a mortification, ariſing from a gangrenous diſpoſition of the juices; and a local mortification, when merely the conſequence of external injury.

When a mortification in compound fractures ariſes from a gangrenous diſpoſition of the juices; ſoon after the injury is received, whether a large wound is made by external violence, or a ſmall wound by protruſion of the broken bone, the lymph, which ſtagnates about the wound, immediately inflames and corrodes the veſſels which contain it; when air bubbles in the membrana adipoſa, and other membranes, are inſtantly formed; which air bubbles, by increaſing the inflammation, are increaſed, and extended immediately, upon the ſmalleſt degree of obſtruction taking place, all over the limb, &c. an Emphyſema often firſt diſcovering the tragedy that is acting under the ſkin, not yet apparently diſeaſed. A fever at this time frequently comes on, accompanied with a delirium, great dejection of ſpirits, and often a particular wildneſs in the looks; the pulſe is either quick, low, weak, and fluttering, or quick, unequal, and hard, and the ſcene is frequently cloſed with a rapidity that will not admit of aſſiſtance.

If an inciſion is made into the affected part, when the air bubbles are firſt formed, it is ſenſible, and blood is diſcharged from the arteries in a florid ſtate, as free as uſual; the membrana adipoſa is of a darkiſh yellow colour, and the muſcles only appear browner than common. Afterwards the ſkin becomes inflated, and the muſcles, not yet having loſt their ſhape, frequently force themſelves out immediately upon making an inciſion, with a large diſcharge of wind, and a quantity of frothy matter; the blood in the veſſels is now turned to a black, coagulated maſs, the membrana adipoſa and the membranes in the interſtices of the muſcles and fibres, and the muſcles themſelves putrify; and laſtly, the ſkin alſo becomes livid, and putrid; from all which it ſeems evident, that a gangrene brings on a ſphacelus, while the blood is yet circulating in the veſſels.

On the contrary, when the mortification ariſes *ſimply* from injury done to the limb, it is not preceded by a gangrene, but comes on in conſequence of an abſolute ſtagnation of the blood and juices alone; and accordingly the *ſkin* and all the injured parts become dead and putrid at the ſame time, without any previous Emphyſema (*a*). If an inciſion is early made, the part is inſenſible; no other than extravaſated blood is diſcharged; nor do I ever remember ſeeing a mortification ariſe from this cauſe, except in gunſhot wounds, without the ſkin ſuffering equally with the ſubjacent parts; for if the muſcles are only lacerated by the ends of the broken bone, ſuppuration, inſtead of mortification, as in other lacerated wounds, is always the common conſequence, if no other cauſe inter-

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(*a*) A mortification, ariſing from a weakneſs and deficiency of native heat, comes on in the ſame manner, only more gradual, with the ſame appearances; and ſhould a compound fracture happen to a perſon in years, in a weak ſtate of health, this kind of mortification may ſeize him; but the ſtate of the patient will diſcover the nature of his diſeaſe.

interferes; becauſe the circulation, except in the divided parts, is not entirely interrupted.

In this kind of mortification, the countenance continues ſerene; nor does any other fever ſupervene, but ſuch as is common to contuſed wounds; and unleſs the affected part is very near the body, the diſeaſe ſlowly extends itſelf (not by air bubbles taking poſſeſſion of the cellular membrane ſurrounding the large blood veſſels and nerves, ſome time before it makes its appearance in the integuments, as when it ariſes from a bad habit of body, but) by the acrid fluids corroding the neighbouring parts, in the manner of a cauſtic, till matter enough is abſorbed to contaminate, unleſs prevented, the whole maſs of blood. But ſo far as I can judge about this matter, a ſtop may always be put to a local ſphacelus; for I have never ſeen a mortification ariſing merely from the injury done to the part, which did not give way to proper management. The ſame kind of ſucceſs probably induced Mr. GOOCH, after forty years experience, to ſay, that a mortification, attending a compound fracture, ſhould not alarm the Surgeon to a haſty determination of the loſs of the limb; and I am apprehenſive, you will often commit miſtakes, greatly injurious to your patient, if you ſuppoſe every local mortification as fatal as thoſe in the Hoſpitals.

However, the chief reaſon which induces me to differ in opinion from Mr. POTT, is the ſucceſs of the country Surgeons; who, unleſs the parts are ſo deſtroyed as to be evidently irrecoverable, ſeldom amputate, and as ſeldom fail in their attempts to cure. From the beſt information I can procure, I do believe the country Practitioners, who have been really bred Surgeons, do not take off more than one limb in twenty, which has received a compound fracture; nor do they, upon an average, loſe more than one in ten of thoſe they attempt to cure without amputation. And ſurely, if matter of fact is of any conſequence, tho' Mr. BILGUER is far from having proved the *inutility* of amputation; yet he certainly has given proof enough to ſhew, that *immediate* amputation is not often neceſſary.

Theſe circumſtances may ſeem to call in queſtion the judgment of Mr. POTT, in ſo ſtrenuouſly recommending immediate amputation; but their ſucceſs in the Hoſpital, I dare ſay, fully juſtifies all he has ſaid; for I do verily believe, in very bad compound fractures, their attempts to preſerve limbs have moſt frequently been fruſtrated by the death of the patients, and that the eſcapes are much too rare to be made precedents. It therefore is certainly from a principle of humanity, that he recommends a remedy, from which, in his ſituation, it has been found, that the chance of death is by no means equal to that ariſing from ſuch kind of fracture; which leads us to examine, how it comes to paſs, that the country Surgeons are more ſucceſsful in the cure of compound fractures, than thoſe Gentlemen who have the care of great and crowded Hoſpitals.

For this purpoſe, it will be neceſſary to enquire, what is the immediate cauſe of death in compound fractures; and, if we except a loſs of blood from the principal arteries being divided, (which, I believe, is very ſeldom fatal,) it will probably appear owing to a putrid ſtate of the fluids; for this is manifeſtly the caſe, when death is brought on by a gangrene, ariſing from a bad habit of body; and when, by a mortification, brought on ſimply by injury done to the parts, the patient is chiefly deſtroyed by an abſorption of putrid matter. If he periſhes by a putrid fever, it is alſo in conſequence of an abſorption of putrid blood, or putrid matter ariſing from bruiſed fleſh; if, by a colliquative fever, the putrid matter which is abſorbed, being leſs active, produces its effects more ſlowly. But it ſometimes gives riſe to internal abſceſſes, always weakens the fibres, and deſtroys the craſis of the blood; whence the diſcharge from the ſore, and other evacuations, become too great, and the patient is exhauſted.

It is no wonder, then, that rapid mortifications, and great diſcharges of matter, ſhould fruſtrate their attempts to cure bad compound fractures in a large Hoſpital, in the midſt of a great and populous city, where the air the patient breathes, notwithſtanding the greateſt care, combines with the cauſe of theſe diſorders in his deſtruction; for it is well known, where a great number of people breathe conſtantly in the ſame room, the air is not only deſtitute of its vivifying ſpirit, ſo neceſſary for the preſervation of life, but it really becomes putrid from being confined, and repeatedly inſpired, and from being loaded with the putrid exhalations ariſing from mortifications, different kinds of ſores, diſeaſed bodies, *&c. &c. &c.* And perhaps, too, the general methods uſed here, may contribute to the diſpatch of many of theſe unfortunate people; for porters, and thoſe who have been uſed to drink plentifully of drams, beer, and the like, will ſink even under the full diet of the Hoſpital, and die for want of ſome indulgence in theſe bad habits, which are now, from cuſtom, become neceſſary aſſiſtants in ſupporting the ſtrength of the body; ſo that the Gentlemen of the Hoſpital labour under the greateſt diſadvantages, and we may wonder, that any recover, rather than that moſt die. Whereas, in the country, the patient has every poſſible advantage from purity of air: nor are we tied down to ſett rules; but from learning the former manner, in which the patient has lived, we ſupply him properly with thoſe things to which he has been accuſtomed; and I have repeatedly ſeen the moſt ſalutary effects follow a due allowance of ale, wine, or brandy; where a few days low diet has brought on want of ſleep, delirium, loſs of appetite, and an ill ſtate of the wound.

Perhaps it may be worth while to enquire, too, whether free and frequent bleeding, to prevent or remove inflammation in every compound fracture, may not ſometimes haſten the diſſolution of the patient; for, notwithſtanding it may ſeem proper during the ſtate of inflammation, yet by thinning the blood, emptying the veſſels, and reducing the ſtrength, a greater abſorption of matter follows after the inflammation is gone off, and produces more violent effects.

I have conſtantly obſerved, whenever the patient has loſt much blood at the time of the accident, or whenever I have been called where there has been a free uſe of the lancet, that colliquative ſweats, looſeneſs, and a greater diſcharge from the ulcer is ſooner the conſequence of the abſorption of matter, and with much more violence, than when the patient was leſs reduced; and it is very probable, if theſe people had lived upon ſpare diet, and breathed the air of an hoſpital, their complaints had ſtill been aggravated, till death had been the conſequençe.

I well remember, that the Gentleman I ſerved my apprenticeſhip with, very ſeldom bled in compound fractures; and, what may ſeem ſtrange to thoſe, who are fond of bleeding, it was impoſſible for any man living to have better ſucceſs; and many accidents of this kind fell under our care. Nor was this treatment confined to his practice alone; for, upon enquiring, I have been informed by others of long experience, who have alſo had remarkable good ſucceſs in the cure of theſe accidents, that, like him, they always haſtened the digeſtion of the wound without *much bleeding*.

For my own part, I have always been cautious in reducing the patient's ſtrength; yet in ſtrong plethoric habits, where much blood has not been loſt at the time of the accident, eſpecially if heated by liquor, which is not infrequent, I commonly take blood away, to prevent great inflammation, *&c.* But, on the other hand, where the hæmorrhage has been conſiderable, or where the patient is rather of a weak conſtitution, I defer the operation, and only afterwards bleed, if the ſymptoms of inflammation peremptorily demand this evacuation: But this rarely or never happens; and I have ſeldom found the tumor, pain, and inflammation or fever, riſe ſo high, as to make repeated bleeding neceſſary, *if proper care has been taken of the limb*; not only by placing it in a proper poſition, and then leaving nature to accompliſh her own work; but by uſing ſuch applications, as are capable of giving her aſſiſtance. And even where improper applications have been uſed, or the injury for ſome hours intirely neglected, *&c.* ſo that great tumor and inflammation have come on, even till bliſters have ariſen upon the part, yet ſo much bleeding is not here neceſſary, as theory may lead us to think; for the diſcharge from theſe bliſters, when properly promoted, aſſiſts in taking off the tenſion by unloading the lymphatic veſſels; and if to the topical remedies, *moderate bleeding*, antiphlogiſtic ſudorifics, and medicines which purge, are joined, the tumor commonly declines in a few days; for I find, when theſe ſymptoms ariſe from ſimple inflammation, they are not ſo formidable, as their appearance might lead us to think. Repeated bleeding, in theſe caſes, is only required to prevent an increaſe of inflammation, by leſſening the impulſe of the blood againſt the obſtructed veſſels, when too violent, for which purpoſe the loſs of a moderate quantity is ſufficient; and if you will have a little patience, the diſcharge from the ſore will moſt effectually remove every diſagreeable ſymptom; for wherever the obſtructed fluids can be outwardly diſcharged, it makes a material difference in the treatment from thoſe inflammations where no evacuation can be made from the affected part.

There is not any doubt, but antiphlogiſtic medicines, a ſpare, cooling diet, and an open belly, are, in general, proper, while the limb is in a ſtate of inflammation; but where this treatment has been carried much farther, I do think, with Mr. POTT, that "it has not unfrequently "been the cauſe of the loſs both of limbs "and lives." We therefore do not wait till the appetite begins to fail, and the patient ſweats and purges without aſſignable cauſe, or in conſequence of a large diſcharge of matter from the limb, before we alter our proceedings; for when things are come to this paſs, it may often be impoſſible to find remedies ſufficient to cure the diſeaſe. Theſe ſymptoms, therefore, muſt be guarded againſt, rather than ſuffered to take place; for which purpoſe, as ſoon as digeſtion appears, and the pulſe becomes quieter, the bark ſhould immediately be given, which may be done with the utmoſt ſafety, and a more generous diet gradually allowed, as the appetite returns; for tho' exceſs ſhould be carefully avoided, yet entirely altering the way of living of the patient, certainly leads to deſtruction; and I believe the beſt way of treating him, is only to abridge him a little of his uſual diet, when it has been of that kind which has a tendency to inflame, or greatly enrich the blood, remembring the aphoriſm of HIPPOCRATES, that "*a "ſlender and ſtrict diet is, in lingering diſ-*

"*eaſes, always dangerous.*" So much for the general method of treating the patient; now let us more particularly conſider the injured limb.

What Mr. POTT ſays about the reduction of the limb, carries conviction along with it; but much of your future good ſucceſs depends upon removing looſened, and detached, or ſharp pointed bones, extraneous bodies, *&c.* at the firſt dreſſing, by the practice of freely dilating the wound where it is too ſmall for this purpoſe; by which means, you reduce the wound nearer to *a ſimple ſtate*, and not only prevent irritation, pain, and their conſequences; but render future probing and examining into the ſore unneceſſary; and thus avoid many inconveniences that might ariſe from that indiſcreet practice.

This operation ſhould always be done without violence; but I am fearful you will ſcarce always be able to remove looſened or ſharp pointed bones, which ought to be taken away, without giving pain; but the patient will ſuffer much leſs, if they are removed juſt after the accident has happened, while the parts are rather inſenſible, than after inflammation has taken place. Indeed it appears to me, that we ſhould not, if it can be done without great violence, or lacerating any large blood veſſel, omit removing, at the firſt dreſſing, whatever may cauſe irritation; for I have conſtantly found, when theſe, along with the coagulated blood, are inſtantly taken away, the patient always recovers with much more eaſe both to himſelf and his Surgeon.

But tho' what is ſaid about the reduction of the leg appears to be perfectly right; yet there are ſome other things which require conſideration; for if the wound happens to be on the out, or under ſide, muſt not the leg be moved every dreſſing? — This circumſtance has eſcaped Mr. POTT's notice; but Mr. SHARP (*a*) ſays, "the leg may be ſupported by a "ſteady hand againſt the upper ſplint, and "put into any poſture that may be neceſ-"ſary to dreſs a ſore on the fibula, or un-"der part." But I am very apprehenſive, let the hand be ever ſo ſteady, this moving will overbalance all advantages from ſituation. Again, if the wound happens to be on the inward or upper ſide, the matter will lodge till the wound is full enough to run over; and part being abſorbed, produce thoſe evils ſo loudly complained of in

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(*a*) New method of treating fractured legs.

the hoſpitals (*a*). On the other hand, if the wound is on the ſhin, or on the back part of the leg, the ſide poſition is moſt favourable for the diſcharge of matter; ſo that it may be well worth conſidering, whether the wound ought not to direct us in what manner to place the leg. If it ſhould be thought prudent, under ſome circumſtances, ſtill to place it after reduction in the old poſture, the practice of ſawing off the protruding bone muſt ſometimes take place, which operation is done without much trouble, or any hazard, and always with great advantage to the patient. Whereas the lodging of matter is always capable of producing miſchievous, and frequently fatal effects, and ſhould be guarded againſt, not only by an enlargement of the wound, when too ſmall, but by every other ſtep that can be taken.

Dry lint is very properly adviſed, as the beſt application, where the fracture is likely to heal by the firſt intention; for in order to promote a reunion of the parts, we

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(*a*) To remedy this inconvenience, I have lately placed a fractured leg, where the wound was on the upper ſide, ſo, that there was a declivity from the ſhin to the calf; by which means the matter did not lodge; for I would not, *if poſſible*, give up the advantages ariſing from the relaxed ſtate of the muſcles.

we ſhould avoid every ſtep that uſually brings on digeſtion; and dry lint, in itſelf, has no property of promoting digeſtion. Mr. SHARP ſays, " by this new poſition, " if the fracture be compound, the wound " generally heals by the firſt intention, the " great impediment (irritation) being pre- " vented;" and there is no doubt but this practice may contribute much to a reunion. But on the contrary Mr. POTT ſays, " the " cure by the firſt intention is the caſe of " ſome of the lucky few." And from what I have ſeen of this matter, the cure by this method can only take place, when the bone is ſimply broken, and comes thro' the ſkin, without cauſing great laceration; for when the wound is ſo large as to give a free admiſſion to the air, ſuppuration follows. Therefore, when from this circumſtance it appears, that the cure by ſuppuration muſt be purſued, the wound ſhould be dreſſed with a *digeſtive balſam ſuited to the degree of irritability of the patient*, inſtead of dry lint; by which treatment you will find eaſe and digeſtion much ſooner procured; for the inflammation will not riſe ſo high as when dry lint is uſed (*a*); and it is moſt certainly not only

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(*a*) **Mr. MONRO, to avoid the inconveniences which attended the application of aſtringents, &c. uſually applied after operations to ſuppreſs the bleeding of the ſmall veſſels,** your duty to avoid doing miſchief, but alſo to *aſſiſt nature, by removing every thing injurious, and by ſupplying her with what is wanting to perform a cure*; in which the whole art of Surgery conſiſts.

However, this dreſſing muſt be continued no longer than till the tumor and in-

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veſſels, judiciouſly ſays, "there is occaſion for no other application to the wound than the threads of ſoft half-worn linen, which the French call *charpie*, the Engliſh *lint*, and we *caddiſs*, which is a gentle abſorbent, is ſoft and eaſy to the wound, and by the corrupting liquors it imbibes, proves one of the ſtrongeſt, moſt mild, and ſafe ſuppuratives." *Ed. Med. Eſſ.* vol. iv. p. 267.

This doctrine Mr. SAMUEL SHARPE afterwards applied to wounds in general, without conſidering that the encomium Mr. MONRO beſtowed upon dry lint, was to ſhew its preference to the aſtringents, which uſed to hinder digeſtion, by conſtringing the mouths of the ſmall veſſels, or that in accidental wounds, it is ſeldom wanted to ſuppreſs bleeding; and that notwithſtanding in the *end* by collecting the corrupting liquors it proves a ſuppurative, yet certainly nature may be better aſſiſted in promoting digeſtion; for when dry lint only is applied, the divided veſſels inflame, and the obſtruction continues till the confined juices become acrid enough to give themſelves liberty. Whereas, when a mild balſam, of a *proper conſiſtence*, is applied, the veſſels are preſerved in a ſtate capable of giving way to the impulſe of the fluids, leſs tenſion will of courſe follow, and more eaſe to the patient. But (reaſoning apart,) if dry lint is applied, a week or more elapſes before digeſtion is compleat, during which time, the part remains hot, ſwelled, and painful. If a digeſtive balſam is uſed, a good digeſtion follows in two or three days, and the patient complains of much leſs ſoreneſs and pain, than when contrary ſteps have been taken.

flammation are intirely gone, digeſtion is compleat, and the ſore becomes clean; leſt too great a diſcharge ſhould be procured, when dry lint, or lint dipped in ſimple tincture of myrrh, may be applied; for tho' theſe ſpirituous dreſſings manifeſtly do injury till the ſtate of inflammation is over; yet afterwards, where the diſcharge is great, I think they do ſervice, by bracing up the relaxed fibres.

What Mr. POTT ſays about relaxing cataplaſms, well deſerves your attention; for tho' great inflammation requires great relaxation, yet by over relaxing parts, which are not much ſwelled, the juices ſtagnate, and abſceſſes, or large ſuppuration, is the conſequence: and I make not any doubt, but many have fallen victims to this practice.

But, on the other hand, I do not think the *form* of the applications uſed to keep off inflammation, where poultices are improper, immaterial: for tho' ſome of the liquid diſcutients generally applied, are powerfully capable of attenuating obſtructed fluids, yet they are deſtitute of the other properties, which are neceſſary to prevent inflammation; for, as I take it, the topical remedies, calculated for this intention, ſhould both attenuate obſtructed fluids, and at the ſame time preſerve the veſſels in a ſtate capable of acting upon their contents; whence the circulation and perſpiration are carried on regularly in the neighbouring parts about the wound, and great inflammation is thereby prevented. Whereas, when embrocations alone are uſed, a ſtagnation of the juices does, in a greater or leſs degree, enſue, from the ſkin becoming hard and dry betwixt the times of dreſſing.

This I do not aſſert from the nature of things only, but from experience; having frequently been called to people, where lotions, dry lint, a pledget of digeſtive, and the eighteen tail bandage were the only applications that came in contact with the limb, which I always found remarkably tenſe and painful; ſometimes the ſwelling and inflammation were riſen to a very great height, and abſceſſes, which might have been prevented, were the conſequence. It would be well, therefore, for thoſe who purſue this method of practice, to conſider whether it is not owing to this kind of treatment that they are obliged to have recourſe to large and repeated doſes of opium to eaſe pain; for I do aver, that we who follow a different method of cure, are ſeldom or never under any ſort of neceſſity of having recourſe to that remedy. Indeed, if our applications are not compounded with a view both of attenuating obſtructed fluids, and of preſerving the veſſels as near their natural ſtate as poſſible, we fall very ſhort of the true intentions of cure. And I am very certain, if this circumſtance is duly attended to, and theſe lacerated wounds, which cannot be cured by the firſt intention, are brought ſpeedily to digeſtion by the method already recommended, even in bad habits, and where the caſe is not fortunately circumſtanced, the inflammation will, for the moſt part, be kept within due bounds, without hazarding the conſequences of loſing a great deal of blood by veneſection.

From what I have already ſaid, you ſee I entirely agree with Mr. POTT, that perfect quietude is abſolutely neceſſary in the cure of compound fractures; but we have at the ſame time ſhewn, when the leg is laid on one ſide, this injunction cannot always be complied with; and I imagine, as ſoon as the fractured bones acquire ſome degree of firmneſs (but not before) the knee-joint ſhould be gently moved (*a*), to

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(*a*) See SHARP's new Method of treating Fractures, p. 12.

prevent that contraction of the tendons of the ham, which might probably take place, if the knee was ſuffered to remain bent eight or ten weeks without ſtirring.

The chief reaſon, which has ever induced Surgeons to remove compound fractures, has been to keep them clean. But to defend the bandage from matter, and to prevent us from being under any neceſſity of changing it often, Mr. GOOCH (*a*) recommended the green oil-caſe cloth to be placed on the outſide of the compreſſes; to which I have found it neceſſary to add pieces of ſpunge, both above and below the wound, to prevent the matter from running out at each end; by which means, I have frequently kept the bandage clean enough, ſix weeks or two months, without once moving the limb, where the diſcharge has been conſiderable.

JUNKS, you know, have commonly been uſed in compound fractures, to keep the limb ſteady, which purpoſe they anſwer very well, when properly made, and properly applied; nevertheleſs they cannot be uſed in the ſide-poſition of the limb; and Mr. POTT, you ſee, adviſes the long ſplints,

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(*a*) Caſes, p. 102. or ſecond edit. p. 293. vol. i.

ſplints, which ſupply their place, and lie very commodiouſly upon the part in this ſituation. However, it is worth conſidering, whether they are not liable to one of the principal objections againſt the uſe of ſhort ſplints, in the cure of compound fractures, which is confining the matter, that ought to be diſcharged, as they lie flat upon the leg. The fracture box kept the leg ſteady; but by preſſing up the ſides of the pillow, it often confined the matter; whence I ſoon laid aſide this piece of trumpery, and always ſucceeded with the moſt eaſe, when my apparatus was moſt ſimple. Indeed there is ſimplicity in theſe long ſplints, and when the wound is conveniently ſituated for the purpoſe, they may often be very uſeful, if bolſters to prevent their preſſing upon the ſore are at the ſame time applied. I have often uſed long ſplints towards the cloſe of the cure, in compound fractures, with advantage; and, I imagine, Mr. Pott can only mean to recommend them under particular circumſtances; for you will certainly meet with accidents of this ſort, in which ſplints at firſt, either long or ſhort, would be improper, on account of the violence of the injury.

Strengthening the injured limb, when it is become ſoft and flabby, by relaxing cataplaſms, is another material circumſtance: But this, I am apprehenſive, cannot be well effected by the application of corroborating medicines alone; and I ſhall therefore juſt obſerve, that amongſt all the remedies, no one can contribute more to the cure of compound fractures, than a due degree of preſſure by the eighteen tail bandage properly timed. And, I imagine, it can only be owing to a general diſuſe in the hoſpitals, that ſo many Surgeons have not attended to the advantages ariſing from this valuable branch of Surgery. We were before told by Mr. SHARP (*a*), that " the chief purpoſe of " bandage was to maintain the due ſitua-" tion of a dreſſing, or to make a com-" preſs on particular parts;" and I cannot find that Mr. POTT uſes it in fractures for any other purpoſe, than keeping the dreſſings in their proper place; and yet, where a compound fracture will admit of cure by the firſt intention, it certainly promotes a reunion; and in every caſe, where it can firſt be applied, it prevents inflammation and pain, and forwards a re-

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(*a*) Pref. to Crit. Enquiry.

gular ſuppuration; for, if by the aſſiſtance of a due degree of preſſure, a diſtenſion of the veſſels and fibres is not ſuffered to take place, nor their ſides drawn nearer together than uſual, the nerves will be put leſs upon the ſtretch, the veſſels will be leſs loaded, and more capable of acting upon their contents; of courſe the circulation will be more regular, and the fluids will be tranſmitted properly into the ſore.

But theſe advantages cannot be expected where the parts are much bruiſed or lacerated, or where inflammation has already taken place, becauſe the veſſels are become impervious. And, preſſure, where the fluids are incapable of moving, muſt be injurious, by confirming the obſtruction, and by increaſing pain, where ſenſation, from the nerves being in a ſtate of tenſion, is become acute.

Nevertheleſs, when in conſequence of the diſcharge, and by the aſſiſtance of proper remedies, the obſtruction and inflammation are removed, no application is ſo capable, as bandage, of preventing a large diſcharge, by ſtrengthening the veſſels and fibres, and reſtoring them to their priſtine ſtate. And notwithſtanding ſinus's and abſceſſes are freely opened, and counter openings made, which I would always recommend,

commend, matter will lodge, if bandage is not applied, and be productive of much miſchief; and indeed, when the uſe of this aſſiſtant is omitted, ſinus's will often be formed, which it is impoſſible to open with any great advantage; for where the eighteen tail bandage, after being ſprinkled with an embrocation, had only been applied, with a view to keep on the dreſſings, or to make a compreſs on a particular part; I have found, at the end of ten or twelve weeks, or ſometimes longer, ſinus's penetrating deep amongſt the muſcles, and running, in different directions, almoſt all over the limb. Beſides, the fleſhy fibres had more the appearance of a jelly, than fleſh; and the patients were ſinking under a hectic fever, and a deluge of matter, which I take to be owing to the height of bad Surgery; becauſe when the dreſſings and bandage have been from time to time properly adapted, and the patient's ſtrength preſerved from the beginning, this violent relaxation never happens, fewer ſinus's are formed, and the diſcharge is ſeldom or never (*a*) ſo great as

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(*a*) Perhaps this aſſertion may ſeem ſtrange to thoſe, who have had the mortification of ſeeing their patients die, or of being obliged to amputate in conſequence of a great diſcharge: But I have never yet ſeen the diſcharge in compound fractures productive of either of theſe conſequences; and to exhauſt the patient, who is almoſt always out of danger, by proper management, in ten or twelve weeks time. Nor do I believe there ever was a compound fracture which would not bear preſſure with advantage, if properly managed, and properly timed; and I am fully perſuaded, a clever recovery in a bad caſe, without it, muſt be merely accidental. But, on the other hand, no remedy is capable of doing more miſchief, if injudiciouſly uſed; for if the preſſure is not made with the niceſt judgment, it retards digeſtion, confines matter, brings on inflammation, with pain, and all their conſequences. It can, therefore, only be made with advantage by thoſe, who are become handy in this buſineſs by uſe, and are capable of diſtinguiſhing, from the ſtate of the affected part, when preſſure, and what degree, is neceſſary; for it is as much impoſſible to apply it with propriety, from deſcription, as to play upon the HARPSICHORD without ever having learnt upon that inſtrument.

Upon the whole, ſo far as I can judge of this matter, immediate amputation in

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and I have been alſo aſſured by ſeveral Surgeons of long experience, that they have never loſt a patient, or taken off a limb on this account.

compound fractures ought not to take place, where the joints have not ſuffered violently by the injury, unleſs the muſcles and tendons are ſo cruſhed, or otherways deſtroyed, as to make putrefaction not *a probable*, but an inevitable conſequence: And it evidently appears from the anatomy of the part, that when the mortified fleſh, *&c.* is digeſted off, the limb cannot be made uſeful; and even when the joints have received conſiderable injury, the neceſſity of immediate amputation will depend upon particular circumſtances; for if only part of the ligaments are torn, and the fractured head of the bone can be taken away, the patient may often be cured, ſo as to have a tolerable good limb: But if the greateſt part of the ligaments connecting the joint are ſpoiled, there cannot be any hopes of making a good cure; and, in ſuch caſes, by deferring amputation, we loſe time, omit a good opportunity of performing it, while the parts are uninflamed, and ſuffer the patient to undergo unneceſſary pain from the ſubſequent inflammation, *without any proſpect of future advantage* (*a*).

(*a*) Mr. FAURE is of a different opinion, which ſee, with the arguments of Mr. BOUCHER. NEAL's Tranſlat. Mem. Royal Academy of Surgery, vol. iii. p. 158.

But my connections with thoſe of my profeſſion have not only led me to know the ſucceſs of many Surgeons, whoſe ſituation affords them only common accidents; but alſo of ſeveral, who, as well as myſelf, have had the care of the workmen in Collieries, Lime-kilns, Lead-mines, and the like, where the moſt violent injuries of this kind frequently happen. In theſe places, the bones are, for the moſt part, not only broken into many pieces, and their extremities, now and then, ſeparated, ſo as to come away; but they are alſo often forced into the ground, the principal arteries ſometimes divided, and the muſcles, *&c.* are frequently lacerated, and cruſhed with immenſe weights, even ſo much, that coal fleck, *&c.* in great quantities, is driven into the very ſubſtance of the fleſh, ſo as to render the accident as formidable as poſſible; and yet, it is a notorious fact, that, where the part is not abſolutely deſtroyed, theſe deſperate caſes ſeldom fail of being cured, without the loſs of the limb: From all which I am induced to think, that notwithſtanding *ſpeedy amputation* may be neceſſary and right in great hoſpitals, yet this ought to be no precedent for country practice, which certainly points out, that much more may be expected from the reſources of nature, than ſome imagine; becauſe the eſcapes with life and limb are not very rare, but moſt frequently happen. You ſee Mr. GOOCH, who has wrote well on this ſubject, is not in general for ſpeedy amputation; and I am certain you will have much more ſatisfaction, and acquire more reputation by the diſcerning part of mankind, in preſerving a limb, than in taking it off.

I know, indeed, Operations often make a great noiſe, and prejudice people in favour of the abilities of the Operator; and ſome, with very little knowledge in Surgery, have raiſed themſelves great reputation by this mechanical part of the profeſſion, which requires no great genius, as it depends only upon a knowledge of anatomy, and a practical dexterity of the hand: For do not young Surgeons, of no great abilities, after ſome trials upon dead bodies, perform operations with the greateſt ſucceſs? And you ſee, the niceſt operations are daily performed by illiterate men upon brute animals, with a dexterity that cannot be excelled by thoſe, who unthinkingly dreſs themſelves in a moſt formidable habit, when they perform operations on the human ſubject. And yet there have been men weak enough to leſſen themſelves, and their profeſſion, in thinking, that a dextrous application of the knife characterizes a good Surgeon.

Nevertheleſs, notwithſtanding this part of practice is ſo readily acquired, it has of late years been more attended to by the ſtudent, and cultivated with more aſſiduity, than the treatment of Fractures, Luxations, Wounds, Abſceſſes, Ulcers, *&c.* (*a*); and an able writer upon Operations, ſome years ſince, overlooked theſe articles, becauſe he thought the method of treating them was ſettled. The book Mr. Pott has now wrote, ſhews there was ſtill room for improvement in the cure of fractures, and diſlocations; and a little re-

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(*a*) Mr. Pott, in the Preface to his Treatiſe on the Fiſtula Lachrymalis, obſerves, "That the operative part "of Surgery is the great, and *almoſt only object*, which they "who come to the Hoſpital have in view, becauſe it is "what they have ſeen the leaſt of." And it may be added, that above half the young fellows that have attended during Mr. Pott's time, were bred Apothecaries, and had ſeen little or nothing of Surgery, when they arrived in London. So that it is eaſy to imagine, what will be the conſequence of adviſing ſpeedy amputation to theſe Gentlemen, who are not converſant with any other method of cure. It is true, indeed, Mr. Pott has, in the ſame place, very properly recommended greater attention to the common practice of Surgery; and he has done much, in his ſeveral writings, towards bringing this part of the art to perfection: But, if I am well informed, operations ſtill engroſs chiefly the minds of many of thoſe, who attend the Hoſpital for improvement.

flection would have diſcovered, that the treatment of Ulcers was not arrived at its *ne plus ultra:* And indeed, I am fearful the ſtudy of that part of Surgery, which is moſt common, has been neglected, ſince the ſpirit of performing *capital* operations has ſo much taken place.

Theſe things I mention to you, with an intent to ſtimulate you to apply your mind to the common (*a*) practice of Surgery; and I make not any doubt, if this part of the profeſſion is duly attended to, there will ſoon be a decreaſe in the number of *capital* operations. And when an operation is performed, you will better know how to treat the patient; for a true knowledge in the cure of ulcers is required, wherever there is a ſolution of continuity, which comes to digeſtion. And not only Ulcers, but the cure of Obſtruction, Inflammation, and Abſceſs, *&c.* will ſtill admit of improvement. You will here find an ample field for the exerciſe of your genius; and an enlarged mind will always have infinite pleaſure in *learning from nature,* what methods are beſt to aſſiſt her.

(*a*) By the common practice of Surgery, I would be underſtood to mean that part which cures without the aſſiſtance of the knife, except the opening of abſceſſes, ſinus's, and the like.

And the knowledge you acquire will ſoon diſtinguiſh you from thoſe, whoſe chief enquiries are confined to the narrow limits of handling a knife.

Not that I would have you neglect inſtructing yourſelf properly about the manner of performing Operations, it being a very uſeful, and neceſſary part of the art; but when the nature of diſeaſes, and the conſequence of wounding particular parts are underſtood, ſo that you know when to cut, and when to let it alone, this knowledge will eaſily be attained; for there are few difficulties that occur in Operations, but what you will be able to ſurmount, if you can *preſerve a calmneſs and a preſence of mind*; for which purpoſe I would adviſe you not fooliſhly to imitate thoſe, who value themſelves upon being quick; for if any accident happens, you will be diſconcerted; but go on without too much haſte; nor be unneceſſarily ſlow: and if I can judge from experience, you will not only always be guarded againſt any thing that may happen to fruſtrate your proceeding, but you will alſo be leſs liable to commit any error that may be injurious; for I am very apprehenſive that great quickneſs in chirurgical operations, often ends quickly in the death of the patient. But

I am running from my ſubject; and as nothing but matter of fact can be depended upon in theſe caſes, ſhall only add, that I deſire you will inquire amongſt the country Surgeons, who have been regularly trained up to practice, whether I have not farly ſtated their ſucceſs in the accidents under conſideration; *i. e.* whether they do not cure nearly eighteen compound fractures out of twenty, without amputation; and if it appears, that you have not been miſinformed, I hope you will think I have done right, in pointing out to you a method, by which the country folks, at leaſt, who have the misfortune to meet with very bad compound fractures, may, by proper management, end their days, for the moſt part, with two legs, inſtead of one.

I am, *&c.*

LETTER III.

March 10, 1769.

Dear SIR,

NOTHING is of greater uſe in Surgery, than aſcertaining the principles upon which we are to act, as it leads us out of uncertainty, and directs us to proceed with every advantage to the patient. What Mr. POTT, therefore, ſays on Diſlocations, deſerves your greateſt attention; as it is deſignedly wrote to aſcertain the principles upon which their reduction depends. An improvement much wanted, as they ſeem not hitherto to have been generally underſtood, or fully conſidered, by any writer.

Indeed, it cannot be ſaid, that he is the firſt who pointed out, that great extenſion was wrong, and that the muſcles ought to be put into a ſtate of non-reſiſtance, in order to reduce a diſlocated bone, with propriety and eaſe; as you will ſee, if you examine Mr. THOMPSON's Paper, in the ſecond volume of the London Medical Obſervations and Inquiries; but he is the firſt, who has conſidered the non-reſiſtant ſtate of the muſcles as a general principle, and has endeavoured to prove, that the difficulty attending the reduction of every kind of diſlocation, is wholly owing to the reſiſtance of the muſcles, and tendons, attached to, and connected with the bones compoſing the joint. Whereas Mr. THOMPSON imagines, that one cauſe of difficulty is from the head of the bone not being able to get readily back thro' the opening, which, he thinks, it always makes in the Capſular Ligament; for, in diſſecting the arm of a man, who had a diſlocated ſhoulder at the time he died, it was found, on the ſecond day of enquiry, that this ligament was torn off from the neck of the humerus; in which notion, he has the ſanction of PETIT, who forty years ago was of the ſame opinion (*a*); and from conſidering the anatomy of the joints, and from experiments made upon dead

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(*a*) He adviſes to make the diſlocated bone re-enter its cavity by the way it was forced out, becauſe it leads to the *opening in the Sacculus Ligamentoſus*, which has been made by the eruption of the *head of the bone*. Otherwiſe, coming to its cavity by a new way, and finding no aperture in the ligamentary Tunicle, it carries it along with it into its ſocket, which hinders the reduction being exact, &c. Des Malad. des Oſ. p. 46. tom. i. or Med. Obſ. and Inq. vol. ii. See Note to p. 356.

bodies, we find the ſame ſentiments ſince adopted by Dr. **Hunter** (*a*).

This doctrine, you ſee, Mr. **Pott** has conſidered; his arguments about it have weight; and, ſo far as I can judge from experience, I believe, if the advice of **Galen**, which has been copied by almoſt every writer, of "*returning the diſlocated bone the* "*ſame way in which it was diſplaced,*" is followed, you will, in recent diſlocations, never meet with any obſtacle from the Ligament, if care is taken, that the muſcles do not make reſiſtance to the reduction.

If you look back into the writers on Surgery, you will find the beſt of them adviſe, if poſſible, the practice of reducing diſlocated bones by the hand, without much extenſion; and where extenſion is neceſſary, when it is properly made, they direct the bone to be conducted into its place in the ſame manner. They muſt mean, when it is not inſtantly replaced by the muſcles upon coming near to the cavity into which it is to enter: And it will be worth your while to conſider, whether this part of practice ſhould not occaſionally be continued, even when we proceed upon Mr. **Pott**'s principles.

(*a*) Med. Comment. p. 60.

Mr. Serjeant Wiseman copied the practice of " reducing diſlocations of the " thigh, in young patients, of tender con- " ſtitutions, by laying one hand upon the " thigh, and the other on the leg, and " having ſomewhat extended it towards " the ſound leg, the knee muſt be ſud- " denly forced up towards the belly, and " the head of the femur preſſed into its " *acetabulum* and it will knap in. For (he ſays) " there is no need of ſo great " extenſion in this kind of luxation, for " the moſt conſiderable muſcles being up- " on the ſtretch, *the bowing of the knee as* " *aforeſaid* reduceth it."

You will readily recollect, that Mr. Travis of Scarborough, about twelve years ago, reduced a thigh which was diſ- located inwards towards the *foramen ovale* of the *pubis*, by " fixing his patient upon his " back upon a bed, with his heel againſt " a high raiſed bedſtead, where he had " ſufficient foot-hold, and the extenſion " was made by three men, with a towel " fixed above the knee upon a napkin " folded and rolled on to prevent the ſkin " from being chafed. The patient's right " knee was bent ſo as the leg made about " a right angle with the thigh; and an " aſſiſtant was placed on his knees upon

" the floor, holding the ancle, with di-
" rections, on a certain ſignal, to puſh the
" leg outwards; by which, as with a le-
" ver, the head of the thigh bone would
" be twiſted inwards and downwards. Mr.
" TRAVIS placed himſelf on the patient's
" right ſide at the bed foot, with the palm
" of his left hand on the head of the lux-
" ated bone, and his right near the pa-
" tella. The extenſion being made gra-
" dually and ſteadily by the towel-men,
" until Mr. TRAVIS thought the bone
" might be moved, the ſignal was given
" to the aſſiſtant who held the ancle,
" which he punctually obeyed; at the
" ſame inſtant, with a ſmart jerk, Mr.
" TRAVIS puſhed the head of the bone
" downwards and outwards, and the *pa-*
" *tella* inwards; and immediately the bone
" ruſhed into its proper place with a ſnap,
" that was perceived by all preſent."

About twenty-eight years ago I ſaw Mr. HOLBROOKE reduce a diſlocated thigh in a hearty young fellow, about twenty-one or twenty-two years of age, much in the ſame manner, except that the extenſion was made by pulling at the ancle, as well as at a cloth fixed above the knee.— A Gentleman, bred up to Surgery, living in the ſame town, was firſt called in; who ſoon diſcovered the nature of the accident; but having declined every part of the profeſſion, except midwifery, and not having before ſeen a diſlocated thigh, he directly ſent for Mr. Holbrooke, in whoſe abſence it fell to my ſhare to attend; but before I ſet out, I thought proper to look what had been ſaid about an accident I had never ſeen, and had the misfortune to take down Turner, who ſeems to have copied from Wiseman; but has omitted the material circumſtance of making his extenſion towards the ſound leg, and puſhing the knee up in the ſame direction. When I came to the patient, the *round head* of the bone in the groin near to the foramen ovale, and a cavity where the great trochanter ought to have been, at once diſcovered what was the matter; and we therefore ſet about reducing the diſlocation in the manner Dr. Turner directs (*a*): But after repeated attempts without ſucceſs, we tried whether the ſtrap would aſſiſt, by one pulling on the outſide the thigh, while the other puſhed upon the head of the bone; but this did not help us; and ſeeing we were not likely to accompliſh the work we had

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(*a*) Surgery, vol. ii. p. 343.

undertaken, I diſpatched a meſſenger away for my maſter.

Being come, he made the extenſion in the manner we had already done; but he placed himſelf betwixt the patient's legs, with both his hands upon the outſide of the man's knee, and one of his own knees was fixed againſt the upper part of the thigh bone; and when he thought the extenſion was ſufficiently made, he at the ſame inſtant (as the patient lay upon a bed rather below him) puſhed the femur downward, and outward, and pulled the knee inward; by which means the head of the bone went directly, with a conſiderable ſnap, into its place: — So that in all theſe caſes the reduction was finally accompliſhed by making a lever of the thigh bone.

Some years ſince, a child, about ſix years of age, was brought into my Surgery, on account of its having received by a fall, an injury in its hip; and upon inquiry, I found the upper part of the thigh bone intirely at liberty, and under the edge of the gluteus muſcle. Upon which, I of courſe ſet about examining, whether the head of the bone was diſlocated, or broken off at its neck; for which purpoſe, I directed (as the child lay upon a woman's

lap)

lap) the thigh to be put into a ſtate of flexion, then extended by pulling *gently* at the knee, and moved from ſide to ſide, keeping my own hand upon the greater trochanter, which I could plainly perceive; but luckily, at the very firſt of our making theſe motions, while I was preſſing upon the bone, it ſlipped from under my hand into its place; ſo that we cured the patient, and learnt the nature of the accident, both at the ſame time.

A ſimilar caſe lately fell under my notice. A lad, about twelve or fourteen years of age, was thrown from a horſe, and ſome bags of flour fell upon his hip; from which accident that leg and thigh were rendered uſeleſs. The Surgeon, who was firſt called, attended him ſeveral days; and the hip being ſwelled from the bruiſe, he honeſtly told the friends of the boy, that he could not tell with certainty, what was the matter: Upon which I was called in. I firſt ſaw him in bed, and obſerved, as ſoon as the bed-cloaths were removed, that the knee of the injured thigh lay over the middle of the ſound thigh, in a looſe, aukward manner; and upon taking hold of the knee, I plainly diſcovered, that the upper part of the bone was at liberty under the gluteus muſcles; but whether it was diſlocated, or broken, we could not yet tell. We therefore placed him upon a table, to make our proper inquiries; but in moving the thigh, as in the laſt caſe, I felt the bone ſlip from under my hand, the hip and thigh became perfectly right, and the patient from this time began to recover the compleat uſe of his leg, *&c.*

Hence it is plain, that a diſlocated thigh may moſt eaſily be reduced in a ſtate of flexion; and though theſe were only young people, yet it is probable, that thoſe farther advanced in years may be cured in the ſame manner, by only making a ſtronger extenſion. CELSUS, PAREY, WISEMAN, and many others, reduced thighs in this ſtate, notwithſtanding their extenſion was made in a ſtrait line; but unleſs they took great care to keep down the head of the bone, when they puſhed up the knee, the bone would return to the place from whence it was drawn, and prevent the reduction; which inconvenience will be avoided, if the thigh is bent at the time extenſion is made. May not we, therefore, from theſe circumſtances, from the caſes we have mentioned, and from what Mr. POTT has ſaid upon this ſubject, ſelect a practice that will effectually ſerve our purpoſe, whenever the accident immediately under conſideration requires our aſſiſtance?

When a thigh is diſlocated, inward, or outward, perhaps it will be beſt to follow the advice of CELSUS, in laying the patient on one ſide, ſo that the part into which the bone has ſlipped, be always uppermoſt, and that from which it has receded, lowermoſt; by which means the extenſion may be made in any direction you have a mind, and your own invention will point out to you twenty ways of ſecuring the patient upon *a bed*, (for a table will be too high,) ſo that a proper reſiſtance may be made to the extenſion.

This being done, the knee bent, and a towel fixed properly above it, you muſt place yourſelf on that ſide of the thigh, to which the bone is diſlocated, with your knee near to the head of the bone, and both hands on the oppoſite ſide of the knee of the patient, an aſſiſtant being fixed at the ancle. The extenſion may then gradually be begun, by three or four men, with the thigh rather in a ſtate of flexion; and when there is reaſon to think, that the head of the bone is drawn upon a level with the ſocket, the extenſion being ſteadily continued, the knee may be bent nearer to the abdomen, and at the ſame inſtant, while your knee puſhes the bone towards its place, the ancle muſt be moved in the ſame, but the knee of the patient in a contrary direction; by which means, I imagine, the bone will, in general, be replaced, provided the extenſion is ſufficiently made, before we attempt to return it into its ſocket.

I think it is generally allowed, that diſlocations of the thigh rarely happen otherwiſe than inward or outward, though writers alſo talk of its being diſlocated upwards and downwards; but when we call to mind, how ſeldom this accident in any way is met with, it will appear, that our aſſiſtance may perhaps never once be required to reduce diſlocations of the thigh, thus circumſtanced; and it may be much queſtioned, whether Surgeons have not copied this account from one another, without ever once having ſeen this accident; for HIPPOCRATES firſt ſtarted the opinion, perhaps, from *imagining* there was a poſſibility of its happening in theſe different directions: And I ſee it has been handed down, by almoſt every writer, in *his very words*.

However, if the diſlocation upwards or downwards does ever happen, I imagine you will not be at any great loſs about the reduction, if the ſame plan as we have juſt laid down is purſued; except that extenſion muſt at firſt be made with the thigh in a ſtrait line; and it ſeems moſt proper to place the patient, as PAREY adviſes (*a*), "on his ſound ſide," and of a convenient height, that the preſſure with your knee may be made in a ſtrait direction.

When the ſhoulder is diſlocated, the head of the bone, you know, often ruſhes into its place, when it approaches the cup of the ſcapula, even when the extenſion has been made with the muſcles in a ſtate of reſiſtance; and it is reaſonable to believe, that it will more readily happen, when this impediment is removed, by their being relaxed. Nevertheleſs, further art will ſometimes, I think, be required, to conduct the bone into its place, even under

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(*a*) HIPPOCRATES adviſed the patient, in theſe caſes, to be laid either prone or ſupine; and moſt of the writers, except PAREY, have copied him, from one another, very exactly. But by placing the patient in the ſide poſition, you have not only the advantage of uſing your knee, but the extenſion can be continued, while the thigh is brought into a ſtate of flexion; and the perſon at the ancle can aſſiſt you much, by pulling backward, or puſhing forward, the bent knee, and turning the ancle as the caſe requires.

der this advantage. Mr. THOMPSON, you ſee, propoſes, that "the arm ſhould be "raiſed upwards, and a little inwards, to "bring it in a line of direction, centering "between the tendons of the *ſubſcapula-* "*ris*, and *teres minor* muſcles; both of "which, and the flap of the capſular li- "gament, will be relaxed by that means; "the arm is to be held in that poſition "by one hand of the Surgeon; the infe- "rior angle of the *ſcapula* muſt then be "carried backwards towards the ſpine, "and the *acromion* depreſſed downwards "by an aſſiſtant. Theſe motions will "bring the head of the *humerus* to the "outſide of the brim of the glenoide ca- "vity; and the Surgeon, who has hold of "the patient's arm, making a gentle ex- "tenſion upwards, and paſſing the thumb "or fingers of his other hand into the "*axilla*, and there preſſing upon the head "of the *humerus*, by way of fulcrum, de- "preſſes the arm with a quick motion, in "a line of direction, as before mentioned. "Thus the reduction, I apprehend, will "moſt likely take place, by the head flip- "ping over the flap of the capſular liga- "ment, and between the two tendons into "its ſocket."

I have never tried this method, becauſe, in the ſpace of twenty years, though I have uſed nothing but the napkin and ball, I have not, in recent diſlocations of the humerus, been once diſappointed in my firſt attempt to reduce them, when the head of the bone has lodged in the axilla: though ever ſince I read Mr. THOMPSON's Paper, I have made my extenſion with the fore arm bent, which is ſupported either by the patient himſelf, or a ſtander-by. I place the patient upon a cuſhion on the floor, and fix him, by proper aſſiſtance, that his body cannot give way to the extenſion. Having put the arm through a napkin tied together in the common manner, and betwixt my thighs; I put the napkin over my neck, and fix a linen or a woollen ball in the middle of the napkin, ſo that it cannot move. This ball is three times as large as thoſe commonly uſed, of ſufficient hardneſs to make a reſiſtance to the head of the bone, and yet ſoft enough to preſs into the axilla. The proceſſus acromium is left intirely at liberty, and when three or four men (who, by ſitting upon the bare floor, are rather lower than the patient) have by a towel, tied, with the uſual cautions, above the elbow, drawn the head of the bone forward enough, in a dia direction that keeps it about the middle of the axilla; I preſs the ball in behind it, and by leaning backwards, *inſtead of forcing the head of the bone againſt the neck of the ſcapula,* I puſh it outwards, ſo as to aſſiſt thoſe, who make the extenſion, till I find it arrived at the edge of the glenoide cavity, when I direct the elbow to be brought nearer to the ſide, and at the ſame time raiſe myſelf more perpendicular, by which means the head of the humerus raiſes the proceſſus acromium a little, and ſlips up; immediately upon which I puſh the acromium down again, if neceſſary, though it is ſeldom required. Afterwards I move the arm in all directions, that the long tendon of the biceps, *&c.* may again return to their uſual place.

You will readily ſee, from this account, that the arm is drawn rather downwards; which, according to the opinion of ſome, is an improper poſition; for they ſay, if the extenſion is made in an horizontal direction, or downwards, "as the head of "the humerus will preſs upon one or "other of the tendons of the ſubſcapularis or teres minor muſcles, if the extenſion be forwards or backwards; and if "it be in the middle, it will be oppoſed "by the united force of both tendons, and

“ of the ſtretched capſular ligament, ſo as
“ to render the reduction impracticable
“ without a further laceration.”

Indeed, in regard to an horizontal poſition of the arm, I can eaſily believe it improper, when the bone is diſlocated downwards; but I aſſure you, the method of reduction juſt mentioned, has always been attended with the greateſt eaſe both to myſelf and patient, beſides a compleat recovery; and believe me, one grain of matter of fact, to a practical Surgeon, is worth a pound of reaſoning.

I have ſome few times ſeen the head of the humerus under the pectoral muſcle; but in making the extenſion, and moving the arm inward, it ſlipped into the axilla, and was then reduced in the common manner. I have oftener ſeen the head of the bone diſlocated backwards towards the ſcapula. I remember being called to a caſe of this kind in a hard working fellow, betwixt twenty and thirty years of age, many years ago. After diſcovering the nature of the accident, I placed the patient in a chair, and ordered the extenſion to be made with the arm in an horizontal poſture, which I aſſiſted by puſhing with my own hand the head of the bone towards its place: but though we brought it near to the glenoide cavity of the ſcapula, yet theſe ſteps alone could not replace it. I therefore kept my hand fixed upon the head of the bone, that it ſhould not recede, in which I was aſſiſted by a ſteady extenſion at the elbow, which I directed to be bent, and to be pulled backward at the ſame inſtant that the hand was turned a little upwards; upon which the bone was immediately reduced. And I have ſince had the ſame ſucceſs, under the ſame circumſtances; but I took the management of the fore arm to myſelf, and got an aſſiſtant to puſh at the head of the bone.

If you call to mind, you will remember that a diſlocation of the under jaw is put to rights by extending the jaw forward, preſſing down the poſterior part of it, and at the ſame time puſhing the anterior part upward. The elbow, when diſlocated, is reduced by making an extenſion, till the fore-arm can be put into a ſtate of flexion, and then it is eaſily accompliſhed, by bearing upon the lower end of the humerus with one hand, and by taking hold of the wriſt, and bending the elbow with the other: and if it is on either ſide, the hand of the patient muſt be turned inward or outward, at the ſame inſtant, as the caſe requires. Nearly the ſame ſteps are taken with the knee or ancle, when out of joint, *&c.* From all which we may conclude, with CELSUS, that "whatever be the ſpecies of diſlo-" cation, the method of reduction is the "ſame."

In diſlocations of long ſtanding, we find the head of the bone forms for itſelf a new ſocket (*a*); which, with the growing together of the lacerated with the neighbouring parts, in ſome caſes, and the contraction of the tendons, *&c.* in others, is probably the reaſon why they are reduced with difficulty, or that reduction is impracticable (*b*).

The method of reduction Mr. WHITE recommends, of ſuſpending the body by the arm, ſeems the moſt likely to overcome this obſtacle: Though myſelf, and another Surgeon of much experience, uſed it without effect, with every other method we could think of, in an old diſlocation, where the os humeri had ſlipped backwards towards the ſcapula. Perhaps the

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(*a*) See Med. Obſ. and Inq. vol. ii. p. 351. Caſe 2.

(*b*) See Dr. HUNTER's Med. Comment, part i. pag. 60. Note.

caſe was incurable; for the ſame Gentleman tried it where the bone had been a month under the pectoral muſcle with ſucceſs; and another Surgeon has ſince informed me of his moving the head of the humerus, by this method, from under the pectoral muſcle, where it had lain ſome time, into the axilla.

It was a common practice, both with HIPPOCRATES and GALEN, to reduce diſlocated thighs by tying ligatures about the ancles and knees, and ſuſpending the patient with his heels towards the top of the room; but remember, whenever this mode of reduction in the ſhoulder is purſued, above the elbow is the part upon which the ſuſpending ligature ſhould alone be fixed.

By this time, I imagine, you heartily repent aſking my opinion about theſe matters; but as one link of a chain draws on another; ſo I have been led to ſay more upon this ſubject than I firſt intended; though I imagine joining practice to theory will always be acceptable to a young Surgeon. If the method of reducing a diſlocated thigh had been clearly laid down, the Surgeons at the (*a*) Worceſter

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(*a*) See Ed. Eſſ. & Obſerv. vol. ii. p. 317.

Infirmary could not have been at a loſs, in what manner to have relieved this accident; and you ſee, at laſt, they were forced to have recourſe to the vis percuſſionis, which I would chuſe to tranſlate, "Reduction *at random.*"

If you take a view of the chirurgical writers in regard to diſlocations, you will find they have chiefly copied what HIPPOCRATES has ſaid upon this ſubject, and that much the greateſt part of the improvements which have been made, till within theſe few years, has been in an alteration of, or an addition to, the machines he ſometimes uſed in reducing them, which was certainly improving the worſt part of his practice. He gave us the different methods, that were employed in his time, ſome of which have been copied by one writer, and ſome by another; and they have been handed down to us, as the work of different men, by the idle cuſtom of every one implicitly copying a favourite author: Whereas, had they collected only the moſt eligible practice from HIPPOCRATES, together with the few real improvements made by other writers, I think they might have deduced a rational method of cure. For they might have learned, that the diſlocation ſhould be reduced as ſoon as poſſible, that the extenſion ſhould be gentle, gradual, and continued till the diſlocated bone is upon a level with the cavity from whence it receded, at which time, if it did not return of itſelf, it ſhould be reduced the ſame way, in which it was diſplaced; or, as CELSUS has it, "from that ſide in which it was "prolapſed, to the contrary, by preſſing "upon the head, and making a lever of "the diſlocated bone." PAREY expreſsly ſays, you ſhould not faſten the ligature to the wriſt in a diſlocation of the ſhoulder, or to the ancle in a diſlocation of the thigh bone; but above the elbow, or above the knee; otherwiſe the joint of the elbow, or of the knee, will be more extended than the ſhoulder or hip. The extenſion in diſlocations of theſe parts, was, in the days of HIPPOCRATES and GALEN, often made with the fore arm, and knee bent; and it evidently appears, from the practice of every writer, (and, I ſhould imagine, from every man's own experience,) that, whenever a diſlocated limb was reduced, both with eaſe to the patient and his Surgeon, the muſcles were in a ſtate of flexion. But the reaſon theſe were not ſelected from the injudicious parts of practice, ſeems to be, becauſe the principles, upon which we ought to proceed, were not aſcertained. But from obſerving Mr. POTT's doctrine in preſerving the muſcles in a ſtate of non-reſiſtance, by the poſition of the limb, and by retaining the practice of conducting the head of the diſlocated bone into its place, I apprehend we ſhall make choice of that method which will relieve our patients with certainty and eaſe.

I am, dear SIR,

Your affectionate humble ſervant.

POSTSCRIPT.

September, 1769.

I Deſignedly omitted ſaying any thing on the uſe of Fomentations, Cataplaſms, and the like, previous to reduction, where the part is much ſwelled; and on the treatment neceſſary after the joint is replaced; becauſe theſe are ſufficiently taken notice of by almoſt every writer upon this ſubject. But it may not, perhaps, be improper to add ſomething to what Mr. POTT has ſaid upon compound diſlocations; for he only tells us, (ſpeaking of the diſlocation of the Tibia at the ancle,)

cle (*a*), that "when this accident is accompanied, as it ſometimes is, with a wound of the integuments of the inner ancle, and that made by the protruſion of the bone, it not infrequently ends in a fatal gangrene, unleſs prevented by timely amputation; though I have ſeveral times ſeen it do well without." Whence, as you have not yet acquired equal knowledge with this writer, you may perhaps be at a loſs to know, whether, in ſuch a caſe, you ought immediately to take off the ancle, or to attempt the cure, without this operation.

Now, a Gangrene may more frequently follow a laceration of the Ligaments, *&c.* connecting the joints, than other parts: becauſe the inflammation attending theſe accidents often riſes higher, is more obſtinate, and of longer continuance; but this is only local; and what we have already ſaid about amputation, on account of gangrenes, holds equally good here, except, that it will be more frequently neceſſary, in local mortifications of the joints, on account of the ligaments being deſtroyed. But if I may judge from what I have ſeen,

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(*a*) Page 62.

I do believe, if the inflammation is properly treated, it will, for the moſt part, be prevented from terminating in what is properly called a Gangrene.

Nevertheleſs, I am clearly of opinion, with Mr. GOOCH, that compound diſlocations are, in general, of worſe conſequence than compound fractures, if the cure is attempted by replacing the diſlocated bone; not only on account of the obſtinate obſtruction and inflammation, owing to the compact ſtructure of the injured parts, and to the diſſolution of the ligaments, which of courſe follows; but alſo, becauſe the air, having admittance into the joint, renders the Synovia acrid, which, where it is not freely diſcharged, inflames and corrupts the ligaments, produces abſceſſes about the joint, a caries of the ends of the bone, intolerable pain, a great diſcharge, and a colliquative fever in conſequence of an abſorption of matter: and when things are coming to this paſs, life can *often* only be preſerved by a timely amputation. Or if the ſymptoms are not ſo violent as to require immediate amputation, a fiſtula of the joint is commonly the conſequence, and the patient afterwards drags on, for a long time at leaſt, a miſerable life.

But I obſerve, when the wound is ſo fortunately circumſtanced that the ichor and matter do not lodge in the joint, but readily drain away, the ſymptoms are much leſs ſevere, and a cure happily enſues: and leſs diſturbance, and a cure ſtill more readily follows, if the protruding bone can be taken away; for by this means the matter has a free exit, new fleſh more eaſily riſes in the ſore; and the new callus takes upon it the form of a joint, from the impreſſion made by the head of that bone which remains intire.

Inſtead, therefore, of haſtily taking off the limb, when the head of the diſlocated bone protrudes through a wound, I would adviſe the practice Mr. Gooch recommends, of ſawing the bone off, which may be eaſily done, as it is rather ſpongy. — A tall, boney, muſcular man, forty-nine years of age, was, on the 21ſt day of July laſt, thrown off from a waggon load of hay, and great part of the load falling upon him, he was almoſt cruſhed double, at the ſame time that the Fibula of his left leg was broken, and the Tibia diſlocated, and forced out more than two inches, thro' a large wound of the teguments of the inner ancle.

He was immediately bled by thoſe preſent; but the protruding bone remained unaltered, till I ſaw him, which was three hours afterwards, when I readily took it off with a ſmall ſaw. The knee was then bent, and the leg laid on one ſide with a declivity, that the matter, which was hereafter to be formed, might be readily diſcharged. The wound was dreſſed with *a mild digeſtive balſam*, and the other applications and bandage uſed in compound fractures, and an ounce of Glauber ſalts were immediately given, on account of the bruiſe in his breaſt. Next day I found the patient eaſy, and the wound in a good ſtate, digeſtion ſoon afterwards appeared, the diſcharge has ſince been inconſiderable, the void ſpace filled up with new fleſh, which has already acquired a boney conſiſtence, and, in ſhort, the cure has gone on without interruption, and with very little trouble to the patient, further than what was occaſioned by his leg being once moved (from our being unprovided with a proper apparatus at the beginning ;) and there is not any doubt but he will have as uſeful a leg, as he had before the accident happened.

Indeed the eaſe, with which this patient has recovered, and the good ſucceſs I have ſeen, where the head of the bone has been broken off, ſo as to come away; together with the caſes Mr. Gooch has given us, induces me warmly to recommend this practice. And I have not any doubt, but, upon trial, it will be found to be one of thoſe experiments, that will recommend itſelf.

Perhaps it may ſeem ſtrange to you, that I ſo freely uſed greaſy applications in wounds of the ligaments; as they have in this caſe been decried by almoſt every writer, ſince Celsus: And more eſpecially, as the Oil of Turpentine is ſtill uſed and recommended by very eminent men, both in this and other nations, as a ſpecific in wounds of the Tendons and Ligaments, becauſe it is an old practice.

But I am apprehenſive the uſe of Oil of Turpentine in theſe caſes is very pernicious; for I do believe, it has not infrequently, by irritating and inflaming, brought on abſceſſes, and mortifications, which were thought to be in conſequence of the accident alone. I know an eminent writer ſays, "Oil of Turpentine has "the virtue of allaying pain, ariſing from

" wounds of the tendons and nerves, as is " confirmed by the practice of PAREY, " by the opinion of all authors, and his " own continual experience [a]." And yet there is not a lad, that has played tricks with a mountebank's horſe, who does not know, that it has directly a contrary effect; and only reflect one moment upon the application of this remedy to an *inflamed* nerve! But I cannot any way ſo effectually explode this practice, as by giving you a ſhort view of the principles, upon which it was firſt introduced; and I hope you will give me the hearing a little longer, as the getting clear of this remedy, in this caſe, ſeems to be a matter of conſequence.

HIPPOCRATES, who uſed the word Nerve to ſignify a glutinous (ſuch as the Tendons, Ligaments, and the like [b];)

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[a] DE HAEN's Difficulties in the modern Syſtem of Phyſic.

[b] After telling us how the nerves are formed of glutinous matter, (*De locis in homine*, ſect. 1.) and exactly, in different places, deſcribing the Tendons and Ligaments by the name of Nerve; and after informing us that the ſpinal marrow which deſcends from the brain is neither fat, nor much glutinous, he ſays, " The Nerves may be diſtin-" guiſhed by broiling them along with other parts; for " that part, which is neither nervous nor glutinous, will " ſoon be broiled; whereas the nervous and glutinous parts " *will not broil*, becauſe they contain but little fat; for " fat

inſtead of a medullary ſubſtance, ſays, that cold is injurious to the nerves, and a moderate warmth, which does not exceed the third degree, uſeful. Wherefore, he orders them to be dreſſed, when wounded, with myrtle roots powdered, ſifted, and kneaded with oil; and with five-leaved graſs, rubbed in oil, which are to be removed the third day; which applications, he ſays, had better be uſed in winter, than ſummer. And CESLUS, who uſed the word nerve in the ſame claſſical ſenſe (*a*), ſays, with HIPPOCRATES, that

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" fat and oily parts are ſoon conſumed." — A diſtinction it is impoſſible for any to miſtake, who have ever taken notice of a roaſted leg of mutton. Nerve was the *general name* for both Tendon and Ligament, and theſe particular names were alſo uſed to deſcribe their office. For Τενων was the name given to thoſe nerves which are the inſtruments of flexion, contraction, and extenſion; and Συνδεσμος to thoſe which tied any part together; ſo that HIPPOCRATES did not make the diſtinction betwixt nerve, tendon, and ligament, that later writers have done; but often more properly called the tendons, *nervous tendons*, Νευρωδεες Τενοντες: A Ligament, nervous ligament, Νευρωδης συνδεσμος: And where he thought a ligament was compoſed of both a nerve and cartilage, he called it Χονδρονευρωδης δεσμος, a cartilaginous and nervous ligament. Several other nerves had particular names, which ſee in ARIST. *De hiſt. animal.* lib. iii. cap. 5.

(*a*) In his anatomical deſcription of the ſpine, (lib. viii. cap. 1.) he ſays, " the vertebræ ſend out two proceſſes on " each ſide; in the middle they are perforated, where the " ſpinal marrow connected with the brain deſcends. The " ſides alſo, between the two proceſſes, are perforated by " ſmall they are injured by cold, recommends the application of agglutinants to heal recent wounds of them that would admit of cure by the firſt intention; but where the wound was ſevere, emollient cataplaſms were outwardly applied; in ulcers where the nerves were laid bare, he firſt covered them with linen to prevent their being injured by remedies which might be neceſſary to cleanſe the ſore; and mild digeſtives were alſo uſed in ulcers amongſt the nerves (*a*). But this practice GALEN overturned.

He had learnt the improvements made in anatomy by HEROPHILUS and ERASISTRA-

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" ſmall holes, through which, from the *membranes* of the " brain, ſimilar ſmall *membranes* proceed." Now certainly, had theſe been known by the name of nerves in his time, he would not have called them membranes: And I think it is hence pretty evident, that he was unacquainted with what HEROPHILUS and ERASISTRATUS had ſaid about this matter. Nor does CÆLIUS AURELIANUS or PLINY call any ſubſtance by the name of nerve, but the nerves deſcribed by HIPPOCRATES. See next note.

(*a*) When wounds would not unite by the firſt intention, CELSUS often immediately gave them the name of ulcer; and it is probable he uſed this practice whether in recent or old ulcers. He no where treats diſtinctly of wounds of the nerves, *i. e.* tendons, except when he copies from HIPPOCRATES about wounds of the joints; but what he ſays about them lies diſperſed throughout his works.

SISTRATUS (*a*), and after making a new diſtinction (*b*) betwixt nerve and tendon, and then again, confounding theſe differ-

(*a*) Theſe writers, who lived long after HIPPOCRATES, were the firſt diſcoverers of the uſe of the nerves ariſing from the brain, and they firſt very improperly gave theſe organs of ſenſe the name of nerves; probably becauſe they appeared to be white cords ſomething reſembling the tendons, and had really a nervous coat, tho' in every other reſpect deſtitute of any properties that ſhould have thus characterized them; and from the idea which was immediately affixed to this appellation, much perplexity has ariſen amongſt ſucceeding writers of Neurology. HEROPHILUS ſaid, that ſome nerves obedient to the will aroſe from the brain and ſpinal marrow; others took their riſe from the bones, and were inſerted into bones; and ſome paſſed from one muſcle into another, which alſo tie together the joints. (See RUFI EPHESII *Opera, cap. De Ven. et Arter.* p. 65.) Which diſtinctions GALEN at firſt adopted; for in his book *De Oſſibus, ad Tyrones*, he tells us, there are three ſorts of nerves; thoſe which ariſe from the brain, and ſpinal marrow, are called the voluntary nerves; thoſe ariſing from the muſcles, tendons; and thoſe which ariſe from the bones, ligaments: But he afterwards changed his ſentiments. See next note. ARETÆUS made the ſame diſtinctions.

(*b*) He made the diſtinctions betwixt Nerve, Tendon, and Ligament, now in uſe; but it is worth obſerving, that he ſays, (*De uſu part.* lib. 1.) " The tendons are inſerted " into each joint; wherefore they are formed of Ligaments, and Nerves, which were diſperſed amongſt the " muſcles, being afterwards collected together," &c. And in explaining this matter in another place, (*De motu muſcul.* lib. 1.) he ſays, " A Tendon is of a mixed nature, " betwixt a Ligament and a Nerve; it is as much harder " than a Nerve, as it is ſofter than a Ligament; but it is " ſuch a kind of body, becauſe it is made of both of " them. A Ligament indeed is *inſenſible*; a Nerve is en-

" dowed

ent ſubſtances under one name (*a*), we are informed, that his principal aim in the cure of wounded nerves, was to guard againſt putrefaction. — “ Seeing, ſays he, (*De comp. med. ſecund. gener.* lib. 3.) “ that “ putrefaction in all things is produced by “ heat and moiſture, I always think the

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“ dowed with all ſenſe. But a Tendon is not inſenſible, “ becauſe it is part of a Nerve. Nor is it ſo ſenſible as a “ Nerve, becauſe it is not wholly a Nerve. Therefore, ſo “ much as it partakes of the nature of a Ligament, ſo “ much its feeling is blunted.” Whence he durſt not venture to unite divided tendons by ſuture, becauſe of their connection and ſympathy with the brain; ſo that he did not only contradict Asclepiades, who ſaid that the nerves, *i. e.* tendons, were inſenſible; and Rufus Ephesius, who told us they had only an obtuſe feeling whilſt they were cut; (cap. *De Venis et Arteriis*, pag. 65.) But you will find, upon examining, that all the miſtakes in practice, about the ſenſibility of the tendons in an uninflamed ſtate, aroſe from this *imaginary ſtructure*, the mere offspring of a fertile genius.

(*a*) It is from hence that the word Νευρον was uſed by after writers, *without diſtinction*, “ not only to ſignify what “ we now call a Nerve, but a Tendon likewiſe, and a Li“ gament;” and, what is really curious, after the plain diſtinction Galen had made, he copied the ſymptoms following the wounded nerves ſo called by Hippocrates, and applied them to injuries both of theſe, and of the nerves ariſing from the brain; by which he made them both productive of the ſame conſequences; and this miſtake, in oppoſition to the lights, which modern Anatomy has afforded, and to facts which frequently preſent themſelves, is handed down to this very day. Even Boerhaave has fallen into theſe errors; and his learned Commentator has, in conſequence, with great ingenuity, accounted for ſymptoms and diſeaſes following wounds of the

“ cure, in wounds liable to putrefaction, ſhould be attempted by cold, and drying applications.” — Again: “ I agree with HIPPOCRATES, that cold is an enemy to the nerves, and imagine, that that medicine is the propereſt for wounded nerves, which dries and is of a middle nature betwixt heat and cold, or rather inclining to heat; for heat without humidity cannot moiſten. — In punctures, therefore, of the nerves, after opening the external wound, medicines of thin conſiſtence, vehemently drying, which will excite a moderate warmth, penetrate to the bottom, and draw from afar, without giving pain, or injuring the interjacent parts, ſhould be applied. — But warm water, though it mitigates other inflammations, yet it is very pre-

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the nerves, which, from the nature of the parts, could never poſſibly happen. So little, indeed, have people been aware of this miſtake committed by GALEN, that a very late writer, after telling us the conſequence of pricking or wounding a nerve ariſing from the brain, refers back to HIPPOCRATES for further proof of this matter; and yet it is certain he never ſaid one word about them. It would give me pleaſure to explain this point farther; for a diſſertation on wounds of the nerves, and wounds of the tendons (beginning *de novo)* is much wanted; but as I am fearful of tiring you, ſhall at preſent omit what has occurred to me on this head.

" judicial in wounded nerves (*a*), *&c.* " For the ſame reaſons, relaxing cata- " plaſms ſhould not be applied; nor are " things of thick conſiſtence of ſervice. " It is better to foment with old thin oil " made warm, for cold obſtructs the ſmall " opening, *&c.* and the nerves (*b*) are the " moſt ſenſible parts, being a continuation " of the brain, of a cold nature, and ea- " ſily affected by cold. Or with oil, in " which the ſeeds of the fir-tree and pop- " lar flowers have been boiled; or the oil " of ſavin, which is void of aſtringency (*c*) " and of thin part."

Compound medicines for the ſame purpoſe were made of Reſin, Turpentine, Euphorbium, Sagapenum, Opopanax, and the

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(*a*) What inflammation could happen in which the nerves ariſing from the brain were not concerned? even according to GALEN's own deſcription of them, who ſays, " they ſpread like the branches from the trunk of a tree, " all over the body," (*De uſu part.* lib. 1.) But this doctrine was applicable to wounds of the tendons.

(*b*) Here he is manifeſtly ſpeaking of what we now call the nerves; but what he ſays, of their being of a cold nature, is copied from HIPPOCRATES, who knew nothing of theſe nerves; at leaſt not under that name.

(*c*) There is a ſtrange inconſiſtency in this doctrine. Juſt above he has recommended things vehemently drying; here, with more reaſon, they are to be void of aſtringency. Now things vehemently drying would certainly ſtop the diſcharge, and in that ſenſe be aſtringents.

the like. But when the nerves were laid bare, he adviſed milder applications, that would dry without irritating; for he ſays they will not bear the force of Euphorbium, *&c.* as when the ſkin interferes; he therefore in this caſe uſed waſhed Lime, or Pomphylyx mixed in a large quantity of oil, *&c.* but when the wound was accompanied with pain, he applied a cataplaſm made of bean flour, and the Lixivium ſtillatitium called Stacte.

Now, though it is true, that heating and drying ſubſtances prevent putrefaction in dead bodies; yet in living bodies, and eſpecially in tendinous parts, they produce exactly a contrary effect, by hardening and inflaming the veſſels and fibres. However, this theory and practice, with very little variation, was implicitly copied by the *Greeks*, *Arabians*, and *Latins*, except that, by ſome unlucky miſtake, inſtead of the Lixivium ſtillatitium, which is a liquor that ſweats from the myrrh tree, before it is lanced (*a*), they uſed *common Ley* (*b*),

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(*a*) See PLINY, lib. xii. cap. 15.

(*b*) I cannot tell whom to charge with this miſtake; but I rather think it was owing to the Arabians; becauſe I find the *aqua cineris* adviſed by AVICENNA, from whom it was copied by GUIDO CAULIACO, &c. &c. &c. But in juſtice to AQUA PENDENTE, it muſt be obſerved, that he was careful enough to make an exact copy from GALEN, but unfortunately this was overlooked.

which, I dare ſay, you will eaſily conceive, could not afford much eaſe, when the injured parts were inflamed and painful. And yet, upon no better authority than this blunder, a ſoap ſuds poultice was applied by PAREY to the King's arm, CHARLES the IXth of France, when he was pricked in a nerve (*a*), inſtead of a vein. — Oil of turpentine (*b*) ſo perfectly agreed with the remedy deſcribed by GALEN for pricked nerves, that it immediately came into uſe, when the method of

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(*a*) Lib. x. cap. 38.

After all that has been ſaid about this caſe, and its being ſo frequently inſtanced to ſhew the method of curing pricked Tendons; it does not appear, from any of the ſymptoms which followed, that the tendon in the King's arm was injured by the lancet. The *inſtant pain* which made him cry out, muſt be owing to a nerve being pricked; for pain does not immediately come on upon pricking a tendon, as the copiers from PAREY have aſſerted; but ſlowly afterwards; which I do not only know from my own practice, but JOB A MEEK'REN alſo ſays, (*Obſ. med. chirurg.*) in deſcribing the ſymptoms which follow a pricked tendon, *Non mox ab inciſione, ſed lento pede moleſtarunt.* SYDENHAM affirmed the ſame thing; and Dr. HUNTER, in his Medical Commentaries, is of the ſame opinion. — Now the King's arm was *inſtantly* dreſſed, before they could poſſibly tell whether the tendon was hurt, or not; and there is every reaſon to ſuſpect, that the chief ſufferings this royal patient bore, were owing to the *hot oils* and *ſoap ſuds poultice*.

(*b*) However, this was a very different application from old thin oil, oil of ſavin, or oil in which fir ſeeds and poplar flowers had been boiled.

making it was known; and, perhaps, more eſpecially, as **GALEN** himſelf had uſed oil in which the ſeeds of the fir-tree had been boiled. And to the oil of turpentine, ſome aqua vitæ, you ſee, was added, to make it ſtill more capable of exhauſting and drying up the ſerous and virulent humor, which ſweats from the ſubſtance of the pricked nerve; of preventing bad ſymptoms, and of mitigating pain by its *actual heat!*

Now the oil of turpentine, *&c.* was applied before any ſerous humor could be diſcharged, provided the tendon had been pricked; therefore it muſt be uſed by way of prevention. But is not this ſerous humor the natural diſcharge from a wounded tendon (*a*)? and therefore would not ſtopping it by drying remedies increaſe inflammation and pain? It is highly probable the eaſe the King enjoyed was from the Oxycrate and Nutritum; but theſe gave way to the poultice above mentioned, which was thought to be a better remedy for diſ-

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(*a*) The books ſince **GALEN** tell us, that it is alſo the conſequence of pricking or wounding a nerve ariſing from the brain; but this, no where, that I know of, appears *rightly* upon record; and ſeems to be one of thoſe miſtakes which **GALEN** made, by copying what was wrote before his time, about wounds of the nerves; (See Note, pag. 78.) for it had been ſaid, that a diſcharge of ichor was the conſequence of wounding a nerve, *i. e.* tendon.

ſolving and drying (*a*) virulent humors occaſioning pain. But I dare ſay, from the nature of this application, you will think the King had a narrow eſcape from torture, as he was to have been cauterized with ſcalding oil, if the pain had not luckily ceaſed; and the cure took up three months, which is a much longer time than is uſually required for the recovery of accidents of this kind.

This caſe I have particularly taken notice of, becauſe it is copied by HEISTER, and many others, as a ſtandard for practice. If you urge the authority of PAREY himſelf, I will go a little further, to ſhew you how far his great good ſenſe was impoſed on by a ſpecious theory: He dreſſed pricked tendons in the manner of GALEN, with applications made of *Old Oil*, *Reſin*, *Galbanum*, *Opopanax*, *Euphorbium*, *Pitch*, and the like; and ſays, "If the pain yield "not to theſe remedies, but rather increaſe, "with inflammation of the affected part, a "ſwelling of the lips of the wound, and a "ſweating forth of a ſerous thin virulent "matter or filth, then you ſhall cauterize "the part with ſcalding oil, for this will "take away the ſenſe from the nerve, tendon, or membrane, like as if they were

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(*a*) **Two very different intentions.**

" burnt with a cautery, and ſo the pain " will be ceaſed."

Now could any thing more effectually produce a ſwelling of the lips of the wound, and a diſcharge of ſerous matter, *&c.* eſpecially in irritable habits, than the applications PAREY uſed? And might not the patient often be tortured with *ſcalding oil*, in conſequence of ſymptoms brought on by improper treatment? — But I will give you one other inſtance to ſhew how far a pleaſing theory may miſlead men of ſenſe.

WISEMAN had copied the theory about remedies of hot, dry, and ſubtle parts being proper for wounded nerves, or tendons, " to conſume that ichorous water " which firſt affects them, and cauſeth the " putrefaction;" and therefore he, " in " the beginning, uſed *ſcalding oil of roſes*, " with a little bay ſalt diſſolved in it, and " dropt into the injured part!" And to mend the matter, if tumor and inflammation came on, he adviſed the cataplaſm made with *common lixivium* or wine, before taken notice of. — A procedure that cannot be reflected on without horror. And yet he afterwards relates a caſe, to ſhew the bad effects of the over uſe of hot oils, which he ſays, in theſe caſes, have been very miſchievous to many; and he cures the patient by a ſimple and rational method, directly contrary to that which he himſelf had propoſed (*a*). Notwithſtanding he immediately afterwards mentions two caſes, where he applied a balſam (compoſed of Euphorbium, Turpentine, Cloves, Sagapenum, *&c.*) equally hot with Oil of Turpentine, and which manifeſtly did injury to both the patients on whom it was uſed; there being a neceſſity of applying fomentations, and emollient cataplaſms, to ſubdue the inflammation it had cauſed. From all which, his own knowledge, and his paying too great a regard to authority, are at once both evident.

The ſame may be ſaid of PAREY; for when he *thought for himſelf* (*b*), no man ſhone more in his profeſſion: but when he ſuffered himſelf to be fettered with theory, we ſee his practice was horrible. But we have

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(*a*) "A young woman was pricked in a Tendon, by being bled in the foot, and in conſequence of uſing hot oil "of turpentine the lips of the wound became turgid, dry, "and inflamed. WISEMAN being called, ſhewed the Surgeon his *error*; dreſſed with Baſilicon, an Embrocation "of Oil of Roſes, and with Diachylon ſoftened with oil, "which lying on two or three days, cured the patient." (Book v. cap. 3.)

(*b*) It is remarkable, that thoſe who did not embarraſs themſelves with the prevailing theory, pointed out a much better method of cure. MARCHETTI dreſſed a tendon laid bare with *dry lint*; and SYDENHAM adviſed an emollient cataplaſm to pricked tendons.

have a recent inſtance in DE HAEN, how far a preconceived prejudice may biaſs the mind in favor of a bad remedy, in oppoſition to matter of fact. We have already obſerved, that he uſed Oil of Turpentine, in imitation of PAREY, to eaſe pain: but he happened to meet with ſome caſes in SCHLICHTING, which fairly prove, that this oil applied to the ſkin cauſed great pains, and dreadful inflammations: but as the ſame untoward ſymptoms did not appear in the ſame perſons from the uſe of Hungary water, he, inſtead of concluding, that the oil was more irritating than Hungary water, curiouſly obſerves, that all the miſchief was owing to an Idioſyncraſy, or peculiar temper of the ſkin.

TURNER alſo embarraſſed himſelf with the ſame theory and practice; and after bringing on inflammation with Oil of Turpentine, and then reducing it by emollient cataplaſms; he ſays, " Indeed, through " miſtake it may ſo happen, that all theſe " fiery exſiccating medicines may be per- " nicious, and haſten thoſe very accidents, " they were intended to avert. As where " the injury has been ſlight, or glancing " only on the aponeuroſis, when *I have " frequently ſeen a ſmall pledget of the com- " mon digeſtive, even a little Baſilicon ap- " plied*

"*plied to the feſtering orifice, has made way*
"*for ſome unhappy ſymptoms to go off,*
"*without farther diſturbance; which had*
"*undoubtedly been aggravated by either of*
"*the foregoing dreſſings.*"

Nevertheleſs, one of the beſt practical Surgeons in this kingdom, in a late uſeful publication, has adopted the old theory; for he cautions us againſt uſing oleaginous, or cold applications, to wounds of the nerves and tendons; and ſays, "the moſt "ſuitable applications to the nervous, or "tendinous part itſelf, are thoſe of a ſub- "tle, ſpirituous nature; ſuch as Sp. Te- "rebinth. dreſſing the other parts of the "wound with vulnerary balſams, *&c.*"

Now if Oil of Turpentine gives pain to the fleſh, it cannot be proper to the nerves themſelves; becauſe they are the organs of ſenſation (*a*). And how unneceſſary its uſe is in wounds of the nerves, the common method of dreſſing a limb, after amputation, where the great nerves are wounded, fully proves. It is true, indeed, it cannot give equal pain to the tendons, when uninflamed, becauſe they are then

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(*a*) I cannot conceive, that this able Surgeon ever uſes Oil of Turpentine to inflamed or wounded nerves. And I wiſh he had not, like WISEMAN, copied the miſtakes of former writers.

nearly inſenſible: but it will moſt certainly criſp up and harden their fibres; and a ſlough, thicker or thinner, will be ſuperinduced. Whereas, if a tendon is only laid bare by a ſimple wound, and dry lint is applied, its blood-veſſels will firſt look inflamed, (like an inflamed eye,) from whence new fleſh will ariſe, and a cure will enſue, without any ſeparation; provided the moiſture which drains from the lips of the wound, be artfully kept from interfering by pieces of fine ſpunge. But if the nature of the accident be ſuch, that the tendinous parts will unavoidably ſuppurate, they may be dreſſed like other wounds; and, in this reſpect will terminate equally well, allowing only a longer time for them to ſeparate, which they always require, on account of their compact ſtructure. So that, you ſee, I am recommending you back to the practice of CELSUS, who no other way guarded againſt the effects of cold, than by keeping off cold air. And is it not amazing, that this treatment, which would procure eaſe, ſhould be overlooked, and preference given to the fiery remedies of the followers of GALEN?

Examine thoroughly, therefore, commonly received opinions, before you adopt

them; whence you will be led to think for yourſelf; which is the high road towards knowledge. In particular, you will find, brought down to our own times, as much abſurd reaſoning about the nature and cure of Ulcers, and ſome as bad practice in conſequence of this reaſoning, as any we have deſcribed. But I hope the miſtakes I have already pointed out in this Poſtſcript, will put you upon your guard againſt plauſible and pleaſing Theories. And if you are deſirous of being eſteemed in your profeſſion, remember, that "*Wiſ-*
"*dom lifteth up the head of him that is of*
"*low degree, and maketh him to ſit among*
"*great men.*"

FINIS.